FOR BUSINESS OFFICIALS OF COLLEGES • UNIVERSITIES & RESIDENT ACADEMIES •

College and University Business

GUEST EDITORIAL

THE WELFARE OF ALL INCLUDES THAT OF NEGROES

F. D. PATTERSON
President, Tuskegee Institute

NO FINER EVIDENCE IS NEEDED THAT THE American people believe in a democratic form of government that requires for its support an enlightened citizenry than capacity school enrollments and predictions that high enrollments will continue. Our trend toward education no doubt likewise symbolizes our conviction that training is essential to success in a highly competitive society and that the future will require more rather than less training for successful individual living.

One of the prime obligations of citizenship is ensuring good government through the wise selection of public servants. This obligation, too frequently honored in the breach, requires for its effective discharge a citizenry taught to think by an educational system adequately manned by teachers ably prepared in our colleges and universities. Such teachers will be committed to the ideals of independence and freedom we have always wanted to characterize our national life.

We are also inclined to believe that this commitment to education is more than the simple acceptance of the privileges of education as an inherent right. It stems from the increasing conviction that education must undergird democracy to the end of producing healthy, informed individuals willing to discharge the obligations as well as to enjoy the privileges of citizenship.

War is always an ugly thing. It destroys and isolates. Isolation leads to intellectual stagnation and moral degeneration. War reveals weaknesses and accelerates change. The serious lag in the war effort caused by those who could not read and by those in ill health leaves no doubt about the price a nation pays for ignorance. We must, therefore, face this postwar era fully aware that our national strength requires the elimination of these basic weaknesses. The future must not find us guilty of failure to educate to the point of physical and mental fitness for citizenship.

It is not mere coincidence that those sections of the nation and those groups in our population that are least able to afford an education are to be found in the section that pays the highest fertilizer bill, while its natural resource of soil is destroyed by erosion and its timber lands are denuded by ruthless methods of harvest. In many other ways these sections reveal waste of human and material wealth. More than this, it is from these sections that heavy out-migration occurs to create problems of significance to other sections.

The Negro people of the South have suffered particularly from failure of their development as a part of the human resources of the region. The South, with less than half the nation's resources, has seen fit to permit a discrepancy to exist in the expenditure between white and Negro children that has varied between a ratio of 1 to 3 and 1 to 8. One state which, until recently, spent only $1,000,000 for higher education for white youths spent less than $100,000 for higher education for Negro young people, with the population divided equally on a racial basis. It is not surprising that the per capita income of this state lags behind that of the other states of the nation and that it is without many of the essential services required for the health and general welfare for all of its citizens.

For the welfare of all, we shall need to face now and in the years that lie ahead the extension of opportunity for participation in all relationships that concern the economic, social and civic welfare on a basis of individual rights and merit. It is un-Christian, undemocratic and wasteful to require persons of different backgrounds, experiences and abilities to fit a pattern or be denied specific expression because of the accident of birth.

If we are to succeed as a nation, education must cease to be thought of in terms of costs; rather it must be viewed in terms of an investment in common welfare. It is not a matter of charity or even of philanthropy that Americans are being invited to give generously for the support of education. The wisest investment that may be made at this time through private and public sources is that which seeks to provide equal educational opportunity for all citizens throughout the nation.

College and University Business

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Looking Forward

Selling Yourself

"THE PRESIDENT DOESN'T REALIZE THE IMPORtance and effectiveness of the work I'm doing" is sometimes the complaint of the business or administrative personnel on campus.

Why?

Probably because that person has not done an adequate sales job with top management. This need not take the form of apple polishing, but rather a regular schedule of adequate reporting. Such periodic analysis and summarizing of the work of business office or department will demonstrate a grasp of the responsibilities of the job, a capacity for performance and a record of accomplishment that cannot be ignored.

The factor of human relations is important in any position. A demonstrated awareness of this may obviate the complaint that "top management doesn't appreciate the significance and effectiveness of my work."

Saving by Specification Spending

IN MAKING PURCHASES, THE COLLEGE AND university purchasing agent would do well to follow the practice of specification buying. There are recognized sources for several types of specifications; among them, the American Society for Testing Materials, the Society of Automotive Engineers and the Federal Bureau of Standards. The National Directory of Commodity Specifications, published by the Bureau of Standards, should be on every purchasing agent's bookshelf.

Specifications included in such reference sources are usually detailed and can best be utilized to indicate values and test procedures. Local conditions may require some modifications.

Several methods of specification purchasing can be utilized. When elaborate specifications are not feasible, as in the purchase of items in small amounts, brand and trade names are guides. Another method consists in designating the electrical, chemical or physical characteristics of the merchandise; this works best when values can be easily checked. A third method is the use of standard samples when certain colors or shapes are necessary in order properly to designate the merchandise.

Purchasing agents will use these specification methods and others; the important thing, if the institution is to profit, is that such procedures be followed as a regular routine.

Invite the Public

MANY COLLEGES AND UNIVERSITIES ARE DOING an excellent job of public relations by encouraging the holding of statewide and nationwide conferences on their campuses.

Such meetings make it possible for many people to become acquainted with an institution which otherwise they would not appreciate. They present an opportunity for the institution, as the host, to interpret its work to a new public. This need be nothing more than a courteous and efficient handling of conference delegates.

Some colleges, such as Grinnell in Iowa, make it a policy to encourage the holding of national conferences of various types on their campuses during summer months. Berea College likewise encourages such meetings. Other examples could be cited.

The interpretation of higher education's needs and facilities will become increasingly important in the years ahead. An institution with friends developed as the result of on-campus contacts will have stolen a march on the rest.

Nonresident Fees

UNDER PRESENT ARRANGEMENTS WITH THE VETerans Administration, it is permissible for a college to assess the student an "equalization fee" in addition to current tuition charges. This permits the institution to bill the V.A. for "costs of instruction" when a survey reveals that tuition charges do not cover these costs.

It is difficult to understand why colleges have chosen to call this equalization fee a fee for "nonresidents." A veteran finds it difficult to understand why he should be charged with a "nonresident fee" when he may have been a lifelong resident of the city or state. Why not call it "an equalization fee authorized by the Veterans Administration to cover the costs of instruction?" Brevity is sacrificed but clarity is achieved.

SURE, IT'S IN THE *Files* BUT CAN YOU FIND IT?

J. B. SPEER
Business Manager
Montana State University

THE DIFFICULTIES OF THE CLERK with her files is a favorite topic of cartoonists. There is usually an overabundance of material in the files, but in many offices the trouble of finding what is wanted is discouraging and efforts to improve the situation often appear hopeless.

Superficial observers enjoin simplification. Experts advise logical and uniform systems, but they overlook the fact that classification involves much knowledge and a high order of intelligence. The chief practical difficulty is the lack of widely accepted fundamentals for filing business correspondence. The efficiency and economies resulting from standardization have not been realized in business filing to the extent that they have in accounting and in library science.

Can it be demonstrated that much business correspondence and other papers may be classified according to a universal pattern, and that this material may be filed efficiently and economically by a more or less uniform or standard plan?

CERTAINTY, RAPIDITY ARE CRITERIA

Certainty and rapidity of obtaining a particular paper or of obtaining all the papers relating to a particular subject, task or function are the basic requirements of any filing system. There is little agreement, however, on how to obtain this essential certainty and rapidity, even under similar circumstances. Then, too, the need for certainty and rapidity must be evaluated in reference to the expense of using a system that ensures certainty and rapidity. Agreement on fundamentals of classification and on terminology is the big hurdle.

Alphabetical filing is widely used, particularly with personal names. As an index or directory of names the alphabet is, of course, of universal application, and in this limited field the plan is simple. But papers on identically the same subject may be widely separated when filed alphabetically by name of the writer or recipient. The chances of finding all the papers on a given subject become increasingly remote as the volume of material increases. Alphabetical filing is called direct filing because the file can be used without an index.

A typical use of numerical filing is the numbering in sequence of each new correspondent and the arrangement of the files in numerical sequence. An alphabetical index is necessary to find the file of each correspondent; hence, numerical filing is known as indirect filing. Numerical filing has declined in popularity in recent years, except for "case" filing, such as a lawsuit, or a closed transaction, such as an expenditure voucher. Numerical filing has the merit of certainty, and current material is not likely to be buried in old files.

In a chronological file, all material is filed by date. Material filed for attention at a future date is placed in a "tickler" file. Chronological filing requires little sorting or classification. Many original records are filed chronologically, but such records are frequently supplemented with numbers in sequence. Journals, minute books, registers, diaries and check book stubs are chronological records.

Geographical filing is used when location is the important factor. This method is favored in selling and is essential for mailing lists.

In subject filing, material on any one subject is assembled rather than scattered through the alphabetical, numerical, chronological or geographical files. When each subject is filed according to the alphabet, it is called the dictionary method; when related subjects are assembled under one title, it is called the group subject classification, encyclopedic or classed method.

This alphabetical group subject method of filing seems to be favored at the present time. Varied terminology of subject, however, makes exact identification difficult, and alphabetical filing of the same subject matter under different names or titles is obviously confusing. Sometimes numbers are assigned to supplement the alphabet in order to increase certainty, particularly in refiling. Other devices, such as colors, are frequently helpful. Subject files usually require indexes and many cross references. Even when the terminology is exact and uniform, alphabetical subject filing does not necessarily ensure classification by related subject.

Various classifications are frequently prepared for special subjects or functions. The "Standard Filing System for Building Materials and Appliances" developed by the American Institute of Architects and widely used and "Subject Headings in Education," a recent book, are illustrations. The first classification follows sequence of construction; the second, the alphabetical or dictionary method. Both classifications are supplemented by numbers and indexes. Neither of these classifications, perhaps unfortunately, permits the use of the decimal system. They illustrate the lack of accepted fundamentals in filing.

FAVORED METHOD

In functional file classification, the function, task or activity of the business is the basis of classification. There is a normal tendency to classify corre-

A librarian can track down a detail out of the entire field of human knowledge more quickly than your file clerk can find certain papers. With a functional file classification in your office, things would be different, this business officer contends

spondence and other data according to function because the persons to and from whom correspondence flows are in many cases concerned with special functions. Finance and accounting matters are assembled in the section of the files assigned to the finance and accounting officer. These tendencies should be carefully observed; various tasks, activities, functions clearly identified, and uniform terms and symbols assigned. Exact identification should be developed for filing as is done in most other fields where classification is essential, such as accounting.

It should be observed, however, that the letters of the alphabet and numbers are only symbols for classification; they have no essential relations to subjects or functions and therefore are not the basis of logical classification. And it should be borne in mind that while all functions may be termed subjects, not all subjects are functions. Another feature of filing by function is its close relation to "point of origin," a principle used in preservation of records in archives; this is an important principle of filing that cannot well be elaborated here.

An illustration of the confusion likely to occur in an alphabetical subject file resulting from lack of an accepted terminology is the material in our files on costs per student. The Office of Education uses the term "unit costs." Other terms in use are "per capita costs," "student costs," "subject unit costs," "student-hour unit costs."

A careful analysis of the activities of an educational institution indicates that the following primary functions may be identified:

000 Administration and General
100 Public Relations
200 Finance and Accounting
300 Staff Personnel
400 Physical Plant
500 Supplies, Equipment and Service
600 Student Personnel
700 Instruction and Research
800 Placement (finding jobs for students, alumni)
900 Other (miscellaneous)

Evidence that the foregoing classifications correspond to the principal functions of schools may be observed in the organization setup of many educational institutions. These primary classifications therefore tend to follow organization lines. However, the fact that well identified functions, Staff

Personnel, for instance, are not functionalized in the management is no justification for minimizing the importance of this function in setting up a file classification. Care must always be used to make sure that the function, rather than the functional officer, is used as the basis of classification.

Each primary classification is subdivided into secondary classifications, or groups, along functional lines. Further subdivisions are made along functional lines as occasion demands. The various methods of file classification — alphabetical, geographical, names or subjects, numerical, chronological — may be used in subordinate relation to the functional classifications.

The first six primary classifications shown are almost universally applicable. The next three correspond to supply, processing and distribution in many other types of organizations. The order of the primary classifications follows somewhat roughly the sequence of identifying functions as an organization is established.

The War Department correspondence manual is an excellent illustration of classification by function. The classifications "follow the business," and although prepared for a particular business, many of the classifications are appropriate for other organizations. The major classifications are limited to groups not exceeding 10, and the decimal number system is used for symbolization. Although prepared in great detail, it is said to be simple in operation. Its authors maintain that "by careful study and application, the principles can be grasped and understood in a few days." The manual is used in both large and small units of the army.

At least two reasons exist for limiting related functions to groups not exceeding 10. This limitation permits the use of the decimal number system as symbols. A subject or functional classification can be used, of course, without symbols. However, a mental picture of the principal functions of the organization to which are attached symbols (numbers or letters) is the most helpful concept in classifying, filing and finding correspondence and other forms of information or data, especially when supplemented by a complete alphabetical index including cross references.

There also seems to be a psychological justification for classifying related subjects in groups not greater than 10. Fifty items segregated by some logical method into groups of approximately 10 each can be remembered more easily than an equal number of ungrouped items. The mind can fairly easily grasp about 10 items whereas a greater number tends to cause a mental weariness.

DECIMAL SYSTEM ADVANTAGES

The advantages of the decimal system as applied to correspondence files are well expressed in "The Memorandum of Conclusions of the President's Commission on Economy and Efficiency," as follows:

"1. It can be applied with ease to the most varied subjects, and the most minute details can be classified by a few figures which represent their relationship and show their dependence upon or subordination to one another.

"2. When any new topic arises, it is always closely related to some other

existing head and connecting it with the nearest head by adding a decimal place makes abundant room for the newcomer. The system is thus capable of unlimited expansion and can never break down for lack of room and growth.

"3. Not only are all papers on one subject found together, but the most nearly allied subjects precede and follow, they in turn being preceded and followed by other allied subjects as far as practicable.

"4. Correspondence on allied subjects is sure to be separated sooner or later in every file arranged on the common plan unless it is frequently rearranged and reindexed, and the great amount of labor involved renders it not only impracticable but also undesirable.

"5. The numbers tell of each letter or file of correspondence both what it is and where it is.

"6. While the total file numbers used may be quite large, as a matter of fact, a file arranged upon the decimal system may be said to consist of only 10 numbers, namely, zero to 9, inclusive, the other numbers being subdivisions of these 10 general heads for the convenience of the file clerk in placing the papers in the file in a systematic manner so that they can be quickly located whenever they are wanted.

"7. Correspondence can be readily located without reference to the subject index."

To these comments on advantages of the decimal system should be added the observation that the fewer the subdivisions, the more general the character of each classification. Therefore, a relatively small volume of material may be classified into the general headings only. Hence, in general, only the major classifications should be specifically required in a standardized file classification; subdivisions may be used as needed. If this principle is followed, the major classifications of an extensive system may be used when the volume of material is relatively small.

On the other hand, the more general the classification, the more attention should be given to further subdivisions as filed material develops, either in volume or in importance of material. The material in the miscellaneous classifications should be similarly watched and subdivided. Standard classifications should be used for all well recognized functions or subjects. The use of "general headings" or "miscellaneous" classifications obviates the tendency to unnecessary subdivision.

An important feature of the Dewey Decimal Classification is the form classification. Much of the material on any subject or function may be classified or subdivided by more or less standard forms. This feature may be adopted by using the numbers following "0" to distinguish the form of material. The following are primary form classifications suitable for files of business correspondence and data :

01	Laws and Legal Matters
02	Policies and Principles
03	Business Methods and Procedure
04	Plans and Projects
05	Reports and Statistics
06	Information; Library; References
07	Associations and Societies
08	Individuals (names of persons, firms, corporations)

The following is an illustration of the use of the form classification with a functional file classification:

200	FINANCE and ACCOUNTING
210	Finance; Funds
212	Appropriations and Income
212.3	Student Fees
	Entrance (matriculation)
	Deposits
	Health
	Laboratory
	Nonresident
	Penalty
	etc.
212.301	Laws and Legal Matters
212.3032	Rules and Regulations
212.305	Reports and Statistics
212.3066	Other Institutions
212.308	Individual Students (Alphabetical file)

Detailed classifications by functions stimulate definiteness of function and systematization of the business. A big public utility arranges its manual of instructions in the same order as its file classification. A functional classification is all inclusive; it clarifies organization consciousness.

The files are the collected knowledge of one's business, the memory of the business, an indispensable tool of management. Furthermore, the certainty of obtaining all the papers relating to a particular function, task or subject is only another way of saying that all available knowledge on any given problem must be gathered together. This is the first principle of scientific management; in fact, the first step in all scientific method.

It is frequently far more difficult for the businessman to find his business papers than for the librarian to track down subjects in the entire field of knowledge.

As long ago as 1913, C. Bertrand Thompson, in an article in *System*, said: "The time must come when a complete classification of all business will be made, similar to the Dewey Classification of all knowledge. This is a task that calls for the resources of a government department or, in default of that, it should be undertaken gradually but with determination by our great universities. And when it is made, the details should be symbolized."

Improvement of filing methods can best be brought about by the selection of a logical plan and the designation of some one person in the organization to take the initiative in promoting the development and adoption of the plan.

An audit of the files may be as desirable as audits of accounts and inventories of properties. Much may be accomplished, however, through each office gradually adopting subject classifications coinciding with well recognized functions of business, supplemented by numbers as symbols, preferably the decimal number system, and an alphabetical index.

If members of an organization can be convinced that the use of a logical and standard plan plus memory is better than memory alone, standardization of files can be obtained without going through the more or less expensive cycle, frequent in management, of centralization, standardization and then decentralization, with central supervision. In general, the files relating to a function or activity may be retained by the person or divisions of the organization most directly concerned. Unless other factors prevent, the files should be kept where most used, but all concerned should have access as freely as if the files were centralized.

UNIVERSITY SPONSORSHIP NEEDED

As pointed out by C. Bertrand Thompson, development of a classification for business functions is a task deserving attention by our large universities. Probably no other type of organization affords a better field of observation and study in the initial stages of the development of such a classification. The project deserves an adequate underwriting. Institutes and conferences would stimulate intensive study and would provide an opportunity for exchange of ideas and presentation of divergent views. Putting away and later finding the papers we want may become another recognized science such as library science.

Billy Yates

ALUMNI: HELP OR HINDRANCE?

STANLEY F. BRETSKE
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University of Chattanooga

HOW CAN THE BUSINESS OFFICE OF the college help in obtaining alumni support and thereby ensure that the alumni will be a help and not a hindrance to the administration of the college?

That is not a rhetorical but a very practical question and I believe it can be answered. First, the business office can build better relations with the students. More than any other administrative office the business office has daily relations with the student. It may be making a payment on account, getting instructions or making a student loan. In these contacts, an understanding attitude by the business manager must always prevail. Explanations of the school's policies that may be questioned or misunderstood should be made as thorough as possible. The lack of full information or explanation causes most misunderstandings, especially in relation to financial matters.

The business manager can use the student loan fund as a good will builder as well as for helping the student through college. Often a student can be shown how to budget his funds and thereby realize more from his money. Good advice is appreciated and the business manager should try to help the student in distress.

The business manager frequently controls the placement of students in part time jobs on the campus. He can use this means of building appreciation by treating students with objective fairness, playing no favorites. The business office has many contacts with the business world and can also be of great assistance in locating part time jobs for students off the campus.

AID TO CLUB OFFICERS

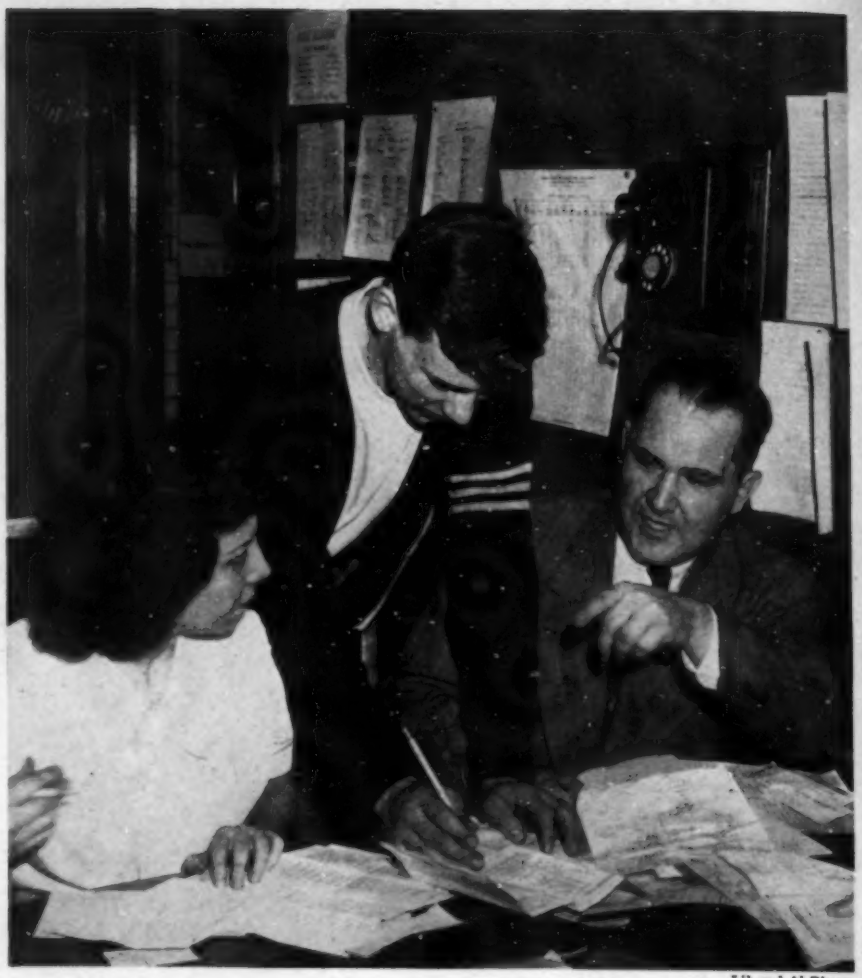
Another service that can be used by the business manager to create better student relations is advice in the handling of financial matters for the various student organizations. Information about setting up a budget and accounting system can be of great assistance in balancing the organization's budget and in avoiding fiscal difficulties. Suggestions on how and where to make purchases can also win the gratitude of student officers.

All these things are not as far away from the subject of this article as might appear at first glance. They serve in an admirable way to make for loyal students, and loyal students make loyal alumni, usually a help not a hindrance to the college administrator.

Possibly my second point, full cooperation of the business office and the alumni office, gets closer to the subject. If the placing of alumni in positions is a function of the alumni office, as it generally is, here is an important opportunity to work together. Since the business office has so many contacts with commerce and industry, the business manager is in a position to hear of many job openings and to pass this information on to the placement office. Such a service to an alumnus is one for which he is forever grateful.

The business office can be of aid to the alumni office in keeping up with changes in addresses of alumni. Since the business office will continue to have correspondence with the recent graduates, especially those who have had loans for tuition, changes in address will be kept up to date. Grad-

STUDENT RELATIONS are the basis of good alumni relations. Help to officers of student organizations and advice to individual students in financial difficulties are appreciated.



Lil and Al Bloom

uates usually give the name of the business manager when filing application for jobs, application for bond or for entrance to graduate school. In this way he keeps up with many who have not borrowed from student loan funds. All this information can be passed on to the alumni secretary and has its influence in making for better relations between the two offices.

As a general policy the business manager has a great many employes under his control. He has a chance to favor the alumni by selecting efficient help from among their ranks. As he trains these employes in a more practical way he is educating them for bigger and more lucrative jobs. With cordial relations of this type it is easy to obtain alumni cooperation.

One of the places this cooperation can be of most help is in fund raising. Some colleges are raising what is called a "living endowment," or an alumni fund. If the proper foundations for good relations have been laid, the alumni will generously accept the responsibility of regular donations to this fund. Many remember their college in their budget along with their church dues or community chest pledges. Administrators who handle or supervise such financial drives feel that this type of plan has a twofold purpose: (1) it gets the funds necessary for the operation of the college and (2) it keeps the alumni continually interested in Alma Mater.

Another place in which these efforts to build loyalty in alumni will pay dividends is in the inspiration of good students to choose the college. Not only is this an effective method to obtain numbers but its chief merits lie in the quality of students. Alumni who have ties of pride with Alma Mater are likely to make particular efforts to get able students when the opportunity offers.

An advisory board of alumni can be of great help to any college. This is particularly true in the future planning of the college. Architects, contractors and suppliers can be used for specific purposes, but the good judgment of alumni in many activities can be utilized and will be gladly granted if it is requested.

Athletics, it almost goes without saying, are one place alumni can get in the hair of the college administrator without trying. Yet if the proper basis of good relations has been prepared, even here there is no need of difference. Usually alumni rally around athletic programs in every way. And when they understand the place of athletics in the overall program of the institution, they will be reluctant to infringe upon it by their demands.

APPROACH IN PURCHASING

By necessity colleges are large buyers of all kinds of merchandise; food stuffs, maintenance and classroom supplies, building materials, furniture, real estate and personal services are purchased or contracted for. A purchasing agent can save a lot of money by the proper contact with his alumni, who are in a position to help the institution obtain better prices. These alumni should be used to the best advantage and this may be a point in which some colleges fail to get proper cooperation.

We must keep in mind that our own products have or should have a better insight, understanding and sympathetic attitude toward Alma Mater's problems than have any other folk. Many buildings have been built and many dreams have been realized through grateful and loyal alumni.

An energetic and friendly alumni office can be of great aid in keeping graduates in touch with the progress and problems of their college. However, it has been my observation that the most efficient of alumni offices cannot succeed unless the individual members of the alumni association have a real affection and sense of loyalty toward the school. This feeling must be developed and cultivated during student days.

Beyond the nostalgic reminiscences regarding "Good old Doc Blank" and "Old Prexie So and So," there must be an important sense of appreciation for the general policies of the administration and particularly those of the business office. If these ideals are kept in mind, alumni will generally prove a help and seldom a hindrance to the administration of the college.

Visual AIDS SHOULD BE CENTRALIZED

PAUL WENDT
Director of Audio-Visual Education Service
University of Minnesota

CENTRALIZATION OF AUDIO-VISUAL aid services is advantageous for several reasons. College and university teachers find that the problems connected with the use of audio-visual aids often provide an insurmountable handicap. These problems arise from the mechanics of projection or sound recording, selection of good materials and proper use of the aids.

Especially at the university level the teaching staff does not have the time, the experience or the patience to track down, for instance, the sound films available on a particular subject; to select the nearest, cheapest and most dependable source for the desired film; to requisition it; to see that it arrives on time; to inspect it before it is shown to be sure that it will go through the projector; to arrange for a projector in good operating condition; to find a competent man to run the film; to attend to several other details to ensure that the showing comes off smoothly, and finally to return the film and see that the charges paid are correct.

All these things constitute an onerous burden for a teacher at any level; members of a college faculty have not time to be bothered with them. All these details should be handled by a central office with a staff fully experienced in all phases of the work.

ALL DETAILS HANDLED

The University of Minnesota has in operation a visual education service to handle all these matters. It is only necessary for an instructor to telephone the visual education service that, on a certain day, in a particular classroom, he wants a showing of a certain specialized film in his subject.

After this phone call, he can forget about the matter with complete assurance that on the day he wants to use the film as part of his lecture he can walk into his classroom, find the shades down, the lights on, a screen in position, a modern sound projector in perfect operating condition in position in the rear of the room threaded with the correct film preinspected, and an operator in attendance who has been thoroughly trained not only to run sound films but to take care of all the petty details of classroom projection. Under these circumstances, there are no difficulties whatever to distract him or his students from the subject matter.

TRACKING DOWN AIDS

The tracking down of audio-visual aids suitable for classroom use is an important part of a visual education service at the university level, because, at this level — in sharp distinction from the secondary school level — materials are highly specialized. A university visual education center should be able to prepare bibliographies of teaching materials, especially of motion picture films, on any subject.

A centralized service, as many universities and colleges are discovering today, provides for numerous economies that will make the use of audio-visual aids in teaching much less expensive. One way of saving is by channeling all requests for materials through one booker or staff of bookers. At first, when films are not used intensively, it may be feasible for many university departments to order their own films, but as their use increases confusion will result from this practice. Actually there have been instances of two departments on a campus requesting the same film from a distant source for the same day. A central booking service eliminates such duplication and disappointment by obtaining the film for both showings at the cost of one day's rental.

Furthermore, the staff of a central booking office consists of specialists in sources of materials and in evaluation of these sources. The centralized booking of films on a campus is directly parallel to the established practice of the centralized ordering of books for all university departments by the university library.

PURCHASE, MAINTENANCE

A centralized visual education service can save the university large sums of money in the purchase and maintenance of the equipment, provided it is given authority over and control of such equipment, whether portable or permanently installed. All projection and sound reproducing equipment coming on the market should be scientifically tested by sound and projection engineers who are experienced in the practical uses of this type of equipment. Further savings can be accomplished by standardization of equipment.

Also a centralized service should maintain a supply of common replacement parts and a maintenance shop for repairing equipment owned by the university from microphones to 35 mm. sound projectors.

DISTRIBUTION TO DEPARTMENTS

Another activity that should be centralized is the distribution of teaching films to the departments. Film libraries are usually operated by the extension division. Because many universities have had extension film libraries long before the campus visual aids service was considered, the latter is often an expansion of the work of the film library and under the direction of the extension division. When no one else would undertake campus service, the extension divisions were willing to organize this work. Logically, however, providing visual aids in the campus classes is not properly the function of the extension division. Institutions of higher education would save funds and avoid confusion by establishing centralized visual education services.

Recently some university and college libraries have become interested in providing a centralized campus service in audio-visual materials. There

Adapted from an article which appeared in Higher Education in May 1946.

Photographic laboratory technician at work.

Repairing plywood exhibit cases and models.

Making up a daily order for materials.

A view of the center's film vault.

Teachers plan handmade visual education materials.

Stored equipment awaiting repair and servicing.

are several objections to placing this work under the library.

First, audio-visual education comprises not only materials but also engineering services for equipment. They should never be separated into two departments; the faculty cannot be bothered with calling two offices in order to plan a classroom showing. All audio-visual materials and equipment should be centralized in one department if the program is to succeed. Providing engineering services is foreign to the traditional functions of a library.

Second, the field of audio-visual education is already too specialized and too complex to be included as a subdivision of the library. The director's training should be in education and liberal arts rather than in library subjects.

Third, visual education has had to fight the tyranny of the printed word in order to make a place for itself in teaching methods. It has won recognition in spite of, rather than because

of, the attitude of libraries. Today it still needs enthusiastic sponsors, and most librarians do not fill this requirement adequately.

PRODUCTION OF AIDS

A centralized service should also provide the facilities and staff for the production of materials of all types from slides and charts to sound motion pictures. The production of teaching films at universities has been going on for decades, but in the last five years there has been a greatly increased interest in this work. Many leaders in visual education feel that the universities will become centers of production not only of the specialized films needed at the university level but also of the more generalized films needed at lower instructional levels.

The increasing interest in university production has also been accompanied by an increase in the amateur efforts of individual faculty members. Their films are sometimes well produced and invaluable additions to university film libraries, but in 90 per cent of the cases the amateurishness of the photography, of production planning and of the subsequent editing and later production stages has consigned the films to the storage shelf or the trash can after the film has been shown a few times.

It should be the function of a visual education service to provide a production staff that will see to it that the quality of productions is kept high enough so that the films will have permanent value. This does not mean that Hollywood quality should be insisted upon. On the contrary, universities cannot afford the commercial prices in production concomitant to the highest professional quality. The university production should, on the one hand, avoid commercial standards and costs and, on the other hand, avoid the great waste of amateur efforts. The production of motion pictures is work for specialists in the field.

It is also the business of a visual education service to keep abreast of all developments in the field. This is done through contact with professional organizations and through the reading of several dozen professional journals. New developments must be evaluated against previous experience and, if significant, they should be followed closely. The faculty should be informed of important new materials or new uses for materials as they are developed. As new materials come on the market, they should be brought to the campus and offered to the appropriate faculty members for free preview. All previewed films should be thoroughly evaluated by both the visual education director and the subject matter specialists concerned with them. These evaluations should be indexed and filed so that they will be available for future reference.

PLANNING NEW BUILDINGS

A centralized service should take an active part in the planning of new buildings so that complete provision will be made for the future use of audio-visual aids in any room. This is not merely a simple matter of arranging for power outlets or light switches in convenient places. For example, 16 mm. sound films provide a crucial test of the acoustics of classrooms. Again, there arises the problem of surmounting the mechanics of visual aids with the least disruption of the class. If new rooms are properly planned, the use of teaching aids will be greatly advanced.

The specialized knowledge required for planning a room for the use of audio-visual aids is generally the result of specific training in that field, not of common engineering knowledge. This point cannot be stressed too strongly. On campuses today buildings are being constructed for which there has been no adequate planning for the use of audio-visual aids. The simple mechanics of projecting in these rooms will be almost an insurmountable obstacle to the use of teaching aids in the coming years; and, because of the long life of university buildings, this will be a handicap for future generations of teachers and students.

A visual aids service should establish and supervise an informal training school for operators for audio-visual equipment. At the university level it is important, as mentioned, that all showings be made with a minimum of distraction to the instructor and to the class. Breakdowns and interruptions should not occur in college classes. Elimination of these disturbances can be accomplished only by a training program that will teach operators the bare essentials of operating the equipment and also the niceties that make up a good showing.

Another important function of a centralized visual education service is the teaching of courses in this field for the colleges and schools of education associated with the university. The teaching of these courses depends greatly on varied resources in materials and equipment. It will profit greatly from association with an active visual education service which has such resources at its command.

TO TEACH others how to employ visual aids is the job of the centralized visual education service.

Veterans' Billing SIMPLIFIED

OLIVER W. WAGNER
Veterans' Adviser, Washington University

AT WASHINGTON UNIVERSITY A general university veterans' office is responsible for liaison with the Veterans Administration, the administrative detail of entering veterans into training with the Veterans Administration, the maintaining of special records required for veterans and the vouchering of their accounts. One supervisor and six stenographer-clerks handle this detail for approximately 3500 full time and 2500 part time veterans each semester.

The contracts between the university and the Veterans Administration provide for the payment of the normal tuition and fees, the required books and supplies and the 10 per cent service charge. All books and supplies are purchased in or through the university bookstores.

At registration time, in addition to the regular university registration forms and the special Veterans Administration forms, each veteran must fill out a three card blank for the veterans' office.

The first card constitutes his authorization to register without payment of fees, provided that the number of days of entitlement the veteran will have left at the end of the term has been entered. This entry is made only for a veteran having a valid certificate of entitlement or a letter of authorization on file at Washington University or in his possession upon registration.

A veteran without the proper authorization is required to make a sizable deposit on his tuition account and to pay cash for his books. These deposits are refunded when his authorization is received. Fee clerks enter the tuition and fee charges on this card at the same time they are entered on the university cards.

The second card is filed in the bookstore until the deadline for drawing books and supplies is passed or the student withdraws from school. Then the total book and equipment charges are entered on this card and it is returned to the veterans' office for billing.

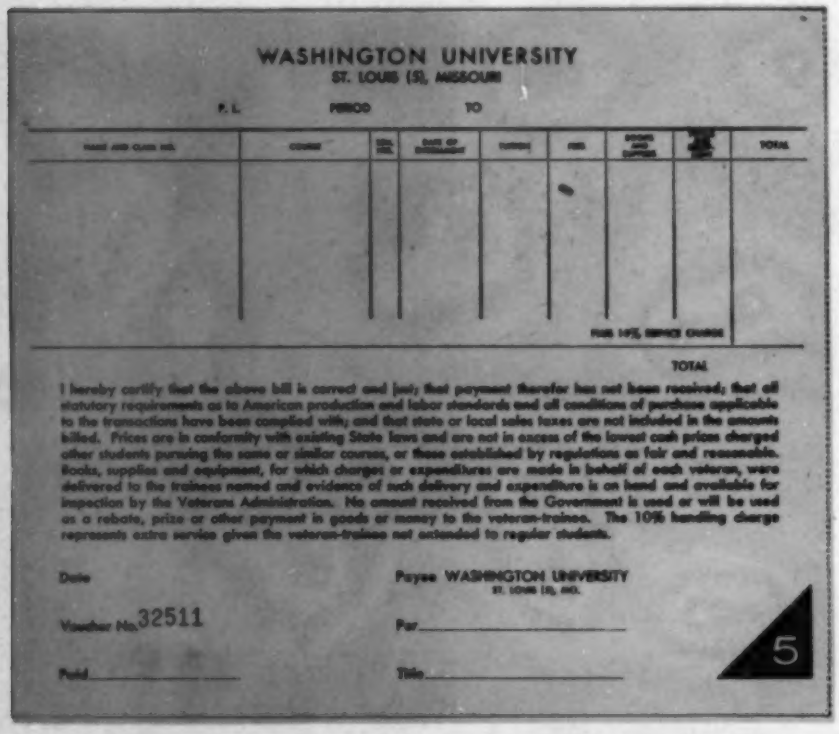
The third card with the student's academic schedule on the back is given to the training officers in place of the old V.A. Form 1905c.

The veteran's last step in registration is to have his student receipt stamped "Certificate O.K." This stamped receipt lists the courses he is taking and is his authorization to draw the books and supplies certified as required for these courses. Individual receipts are signed for each item except miscellaneous supplies, which are grouped in a kit.

The deadline for drawing books and supplies is set as early in a semester as the delivery of materials makes possible. With a few exceptions, it is normally at the end of the sixth week. Book charge cards are then stapled to the tuition card, totals are run and the cards are given to the voucher clerks. Prior to the receipt of the book charges, each card has been checked against the records in the bursar's office.

Three voucher clerks using continuous five copy fanfold forms prepare the bills. The original bill and the first two copies are sent by messenger to the Regional Finance Office in St. Louis; the third copy goes to the bursar's office, and the fourth copy is filed numerically in the veterans' office. When the voucher is paid, the Veterans Administration returns the first copy to the bursar, who forwards it to the veterans' office. The fourth copy in the numerical file is stamped paid; the cards supporting the charges are stapled to the first copy and filed in the individual veteran's folder.

Under authority granted by Veterans Administration Circular No. 268, we plan to begin the vouchering of a term or semester shortly after the final date for withdrawal without reduction of tuition charges. In a regular semester we then have eight weeks in which


WASHINGTON UNIVERSITY
ST. LOUIS (5), MISSOURI

P. L. PERIOD TO

TOTAL

I hereby certify that the above bill is correct and just; that payment therefor has not been received; that all statutory requirements as to American production and labor standards and all conditions of purchase applicable to the transactions have been complied with; and that state or local sales taxes are not included in the amounts billed. Prices are in conformity with existing State laws and are not in excess of the lowest cash prices charged other students pursuing the same or similar courses, or those established by regulations as fair and reasonable. Books, supplies and equipment, for which charges or expenditures are made in behalf of each veteran, were delivered to the trainees named and evidence of such delivery and expenditure is on hand and available for inspection by the Veterans Administration. No amount received from the Government is used or will be used as a rebate, prize or other payment in goods or money to the veteran-trainee. The 10% handling charge represents extra service given the veteran-trainee not extended to regular students.

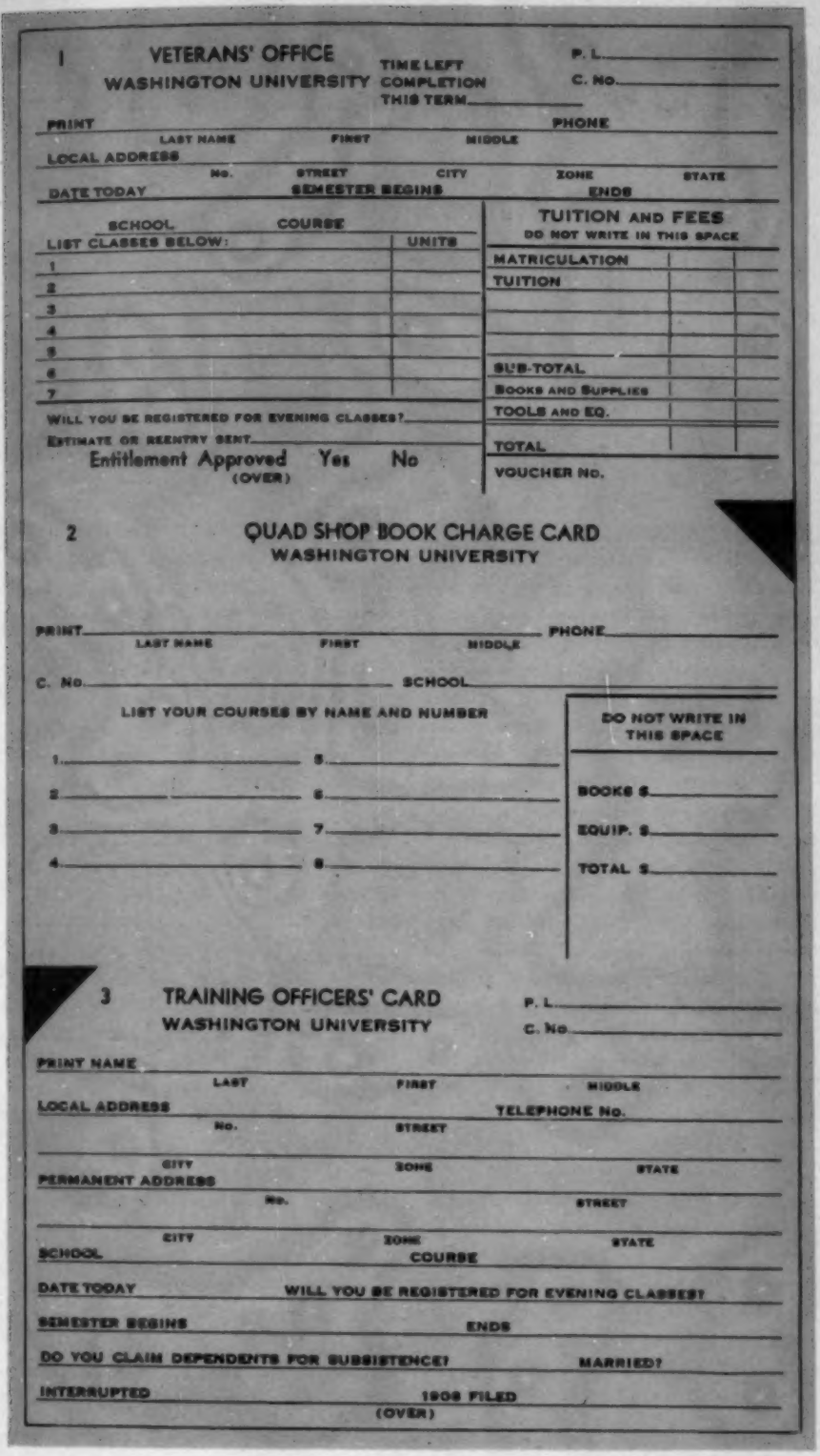
Date Payee WASHINGTON UNIVERSITY ST. LOUIS (5), MO.

Voucher No. 32511 Per

Paid Title

5

VOUCHER CLERKS use continuous five copy fanfold forms.



1 VETERANS' OFFICE
WASHINGTON UNIVERSITY
TIME LEFT COMPLETION THIS TERM
P. L.
C. No.
PRINT
LAST NAME FIRST MIDDLE
PHONE
LOCAL ADDRESS
No. STREET CITY ZONE STATE
DATE TODAY
SEMESTER BEGINS ENDS
SCHOOL COURSE
LIST CLASSES BELOW: UNITS
1
2
3
4
5
6
7
WILL YOU BE REGISTERED FOR EVENING CLASSES?
ESTIMATE OR REENTRY SENT
Entitlement Approved Yes No
(OVER)
TUITION AND FEES
DO NOT WRITE IN THIS SPACE
MATRICULATION
TUITION
SUB-TOTAL
BOOKS AND SUPPLIES
TOOLS AND EQ.
TOTAL
VOUCHER NO.

2 QUAD SHOP BOOK CHARGE CARD
WASHINGTON UNIVERSITY
PRINT
LAST NAME FIRST MIDDLE
PHONE
C. No.
SCHOOL
LIST YOUR COURSES BY NAME AND NUMBER
1. 5.
2. 6.
3. 7.
4. 8.
DO NOT WRITE IN THIS SPACE
BOOKS $
EQUIP. $
TOTAL $

3 TRAINING OFFICERS' CARD
WASHINGTON UNIVERSITY
P. L.
C. No.
PRINT NAME
LAST FIRST MIDDLE
LOCAL ADDRESS
No. STREET TELEPHONE No.
CITY ZONE STATE
PERMANENT ADDRESS
No. STREET
CITY ZONE STATE
SCHOOL COURSE
DATE TODAY
WILL YOU BE REGISTERED FOR EVENING CLASSES?
SEMESTER BEGINS ENDS
DO YOU CLAIM DEPENDENTS FOR SUBSISTENCE? MARRIED?
INTERRUPTED 1908 FILED
(OVER)

EACH VETERAN must fill out a three card blank. The third card has his academic schedule on the back and is given to the training officers.

a large portion of the accounts can be vouchered before the semester ends.

When a veteran withdraws prior to the date when full tuition is charged, a copy of the withdrawal notice mailed to the Veterans Administration is routed to the bookstore. This copy requests book charges and it enables us to bill the account quickly.

This system has enabled us to keep the billing reasonably up to date without excessive expense. It has reduced the interval between the date of billing and the date of payment. It has also provided one procedure for all veterans whether they are regular or irregular, full or part time, graduate or undergraduate, Public Law 346 or 16.

• PLANNING BOOKSTORES

RUSSELL REYNOLDS

Executive Secretary
National Association of College Stores

THERE ARE FIVE METHODS OF HANdling retail business: (1) the ordinary clerk-customer relationship with each clerk handling a drawer and a cash register; (2) the ordinary clerk-customer relationship with the clerk taking cash to a cashier and returning the change to the customer; (3) self-service; (4) the cashier system in which customers are given a ticket on entering the store and are free to go about the store as they please, each clerk writing the price of the items he furnishes on the ticket and the customer taking the material to the cashier for billing, and (5) the booketeria system. Decision on the foregoing factors determines the essential layout of the college bookstore.

Location of the various departments must be considered in reference to each other, to the service to be performed, and to traffic development. The textbook department and the post office that bring students to the store by necessity should be located in the rear or least accessible portion; specialty items need constant traffic by them.

The textbook department should be extremely flexible so that it can be enlarged during the rush period. Texts do not have to be seen to be sold.

Trade books are largely impulse items; they should be in a traffic spot yet at the same time secluded enough to permit browsing. Another impulse item is social stationery; it, too, should be well displayed.

The biggest mistake a store can make is to predetermine a plan and build the fixtures so that they cannot be moved.

The problem of open *versus* closed display must be faced. While materials open for customer inspection are subject to shrinkage through handling and pilfering, most tests show that the increased volume resulting from open display offsets shrinkage loss.

Stockroom space, I should almost be willing to say, should equal the total floor space of the store.

Lighting, flooring and window displays are technical matters that should be decided upon by experts.

FOOD PURCHASING—

"The purchasing agent's," says

A. G. BURKS
Purchasing Agent, University of Iowa

SOME PURCHASING AGENTS HESITATE to centralize the buying of food and I have wondered why. It appears to me that the usual reasons for centralized purchasing are just as applicable to food as to other supplies. These reasons are familiar so I shall mention only a few: the combining of all requirements for quantity prices; the elimination of duplication of effort which is always present when two or more departments are doing the buying; the standardization of items for all departments; the practice of accepted procurement principles with all the advantages of competition, fairness to and proper relations with vendors, and proper audit and control of expenditures.

There are also some disadvantages. There will be complaints on quality, requiring time and patience for checking. There will be complaints on service, necessitating discussions with vendors in regard to the time of deliveries and the idiosyncrasies of truck drivers. Your department may be used as an alibi when anything goes wrong with the dining service. I was blamed recently for the quality of the coffee in one dormitory when a plumber connected an urn to a soft water line with the inevitable result of an off-flavored brew. You must be prepared to take the time to handle such complaints for you will undoubtedly be on the receiving end of some.

DEPENDS ON LOCAL CONDITIONS

Assuming that you decided long ago to centralize food buying, what you probably want to know is how other schools handle the various problems. While the principles may remain the same, local conditions affect food buying more than they do the purchase of most other commodities because many foods are perishable, thus limiting the market area. Because such conditions vary widely from one school to another it is difficult to say that what works in one place will work in another. Much depends upon the size of the school as compared with that of the market area. Schools in large cities will not have some of the problems of those in small towns. Part of what I say, therefore, may not apply to your situation.

The school I represent is in a town not quite twice as large as the student body. We serve approximately 13,500 meals a day in four dormitories, a union building cafeteria, a high school cafeteria and three hospitals. Our being in a small town necessitates the housing and feeding of a large proportion of our students. Also, our sources of supply, particularly for perishables, are limited. There are two towns of 60,000 population, one 25 and the other 55 miles away, and we cannot go farther than these for any perishables except meats. This has resulted in a tendency to become self sufficient from a storage standpoint. There has been a tendency not only to carry large stores of supplies but to handle many items that are not adapted to storeroom operation.

The carrying in central stores of everything possible will not solve all problems of buying. Too often this going to extremes on the stocking of everything in stores creates new problems. We are discontinuing some items in stores and are backing away from the idea that stores can handle advantageously anything that is bought in large quantities.

A central storeroom is an ideal method for handling many food items because standardization is fairly easy. Of course, some items required in a hospital or a residence hall with a set menu are different from those in a cafeteria or in a union catering to party trade but most requirements for the whole institution can be standardized. A storeroom, therefore, becomes an ideal solution for the handling of canned foods and staple groceries.

Aside from the usual advantages, it is much easier to take action when market conditions are favorable and thus do a better job of buying if a storeroom is controlled by the purchasing department, as it should be, than if one must rely on a number of other departments to maintain stocks and file requisitions before purchases can be made.

However, some items are put in stores without justification. I understand that at one time our storeroom carried butter and eggs, and even fresh fruits and vegetables were relayed through there. We are still carrying meats, cheese, potatoes, coffee (which is bought in the bean and ground there), ice (which is not actually stocked but is picked up locally and delivered by stores trucks) and biscuit company merchandise, such as crackers and cookies. I think we may eliminate more of these items, such as coffee, crackers and biscuits, and I am getting out of the ice business through the purchase of automatic ice makers. A central meat cutting room, however, can be operated satisfactorily if the chief accountant does not lose his mind trying to work out a system for charging issues.

KEEP STORES ITEMS DOWN

I suggest that you think carefully before adding items to stores and answer certain questions first. Is it possible to effect definite savings, considering storage and hauling costs and possible shrinkage and spoilage, and, if not, is it necessary to have the stock carried in stores anyway in order to service all units properly? The fact that a large number of small orders could be eliminated is a poor excuse for putting an item in stores. Some way could surely be found to contract for the item and cut down on the number of orders.

As a purchasing agent, I suggest that if you cannot put food buying

This is from a paper read before the Educational Buyers Association convention, Omaha, 1947.

WHOSE JOB IS IT?

"The head of food service," says

DAVID C. FORD

Managing Director, University of Notre Dame Dining Halls

ONE OF THE MOST DIFFICULT PROBlems of operating a college or university today is that of feeding. The reasons are fairly obvious. First and foremost is the rapidly rising cost of food; second are the ever-increasing wage and supply costs, and, finally, is the great increase in students, causing undue building expansion at a time when costs are nearly prohibitive.

The most talked about subject these days is rising living costs with the emphasis on prices of food. Meat prices since the end of O.P.A. have doubled, as have the prices of many other foods. Wages and supplies of all kinds have advanced sharply, yet most schools have not increased board rates to absorb adequately these abnormal costs.

To cope with these hard problems in the best way calls for all the ingenuity at the command of food service directors. They are the ones on whom rests the responsibility for nutritious food, varied menus and control of food costs.

All food purchases should be handled by the food service manager or under his direction because:

1. Food purchasing is an integral part of food management.

2. It is not a full time job, yet it takes an expert to know food. Often there is a great difference in quality in the food processors' top graded packs.

3. A purchasing office becomes too price minded and usually will take the lowest bid. Eventually, sellers get to know this and will cut corners to obtain the business.

4. Food sales people can often enlighten food service managers on different items or in ways of doing things differently or can post them on market conditions. Purchasing offices are not usually interested in such advice.

5. Sellers are more inclined to extend "good buys" to food service managers, particularly if there has been a pleasant relationship between them.

6. It takes less time and clerical work. A central buyer would have to depend upon requisitions from the food manager.

7. It gives greater flexibility in menus. A central buying system would necessitate something like a master menu over a long period.

8. Responsibility is in fewer hands. Too often I have seen food purchased by a well meaning purchasing department that was not suitable; it was not returned to the dealer but was used or wasted in order to "cover up."

9. Food buyers should make regular buying trips to market. A purchasing office would not have such an experienced buyer available and, if it did, the remainder of this person's time could best be used in food service.

10. When a food service manager buys, he has his meal costs foremost in mind and he is in a much better position to know what he can afford, especially in these days of rising prices.

The most satisfactory policy for colleges and universities is to employ the best food service manager available and make him responsible for all food and equipment plus operations.

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high on your agenda you assign it to someone who can. Probably no group of commodities will respond as rapidly to factors affecting prices as foods will and the resulting price changes may save or cost you sizable sums, depending upon correct analysis of the market and acting without delay. Even though you may subscribe to publications that keep you posted as to canned foods' carryover, new acreage, actual pack and movement of each grade and the many other factors affecting prices, you may still need a good clear crystal ball occasionally, for you may be tripped up by unusual weather.

As to the mechanics of buying, at our university we are probably no different from many others in that we send out routine requests for quotations on canned foods. We try to handle the larger quantity items on separate inquires, however, in order to watch the market more carefully on each item and time our inquiries accordingly. We are buying on the basis of specified varieties and grades and have not gone back to actual sampling, although we may go back to it soon.

We are buying meats on current prices, placing weekly orders after checking with five packers. We do not like checking on every item each week but we believe that we are saving money as against a monthly quotation and contract basis. We expect to go on the monthly basis if the markets settle down but right now we feel that a possible fraction of a cent price change on 10,000 pounds a week justifies the additional work. We think a change is more likely to be in our favor now than it would be on a monthly contract. Undoubtedly the packers add in a little something as insurance against increases during the month.

We buy fresh fruits and vegetables on weekly contract and we do not split the list on the basis of low individual items. This necessitates periodic checking of estimated quantities to be certain that no items are being carried on the list that are not being ordered and that would permit someone to run in joker bids, thereby throwing extensions and totals off. We are limited on sources of supply for green goods, being in a small town, so don't do actual shopping for or inspecting of fresh fruits and vegetables before delivery is requested.

I have mentioned that the savings or losses on foods can be sizable because of rapid changes and because the amounts expended for food are large. Do not make food buying a minor sideline. Either be prepared to spend the time it deserves or get a buyer who can procure foods first and other things afterward.

TRAINING YOUR NONACADEMIC

ARE THE TRAINING AND THE DEvelopment of an adequate staff of nonacademic personnel being forgotten during the pressure of planning and expanding the physical plants of colleges and universities?

The need for the physical expansion is obvious but the importance of training personnel to ensure a good operating organization is also essential. In recent years business and industry have given increasing attention to the need for employe training until, at the present time, most businesses and industries of any size have well organized and carefully administered employe training programs. On the other hand, evidence seems to indicate that a great many colleges and universities have neglected this phase of their nonacademic personnel program. Returns on recent questionnaires sent to college unions throughout the country indicate that more than 50 per cent of the unions have no organized training program for their employes.

Why should we train employes? To develop and maintain a good operating organization, we must equip our employes with the skills and methods necessary for the efficient and effective performance of work assignments. Training takes time and costs money but scientific studies show that careful training of employes in job skills and methods increases their production up to 43 per cent.

Besides the need to improve the quality and quantity of each employe's performance, it is also our responsibility to give each one an understanding of the part he plays in the operation of the entire organization. Men working, men thinking, men planning, all are current producers; and foremost in their minds looms the urgency of the present.

However, serious thinking about the future cannot be avoided. In this thinking, the employes must have a feeling of "belonging" and job satisfaction. If they have this, they will stay with the organization. We can then work toward the improvement of standards and can prepare them for greater responsibilities and promotions within the organization. In terms of tomorrow, the operating efficiency of our organization will improve and the "career opportunities" for the employes will not be just a myth. Studies have shown that a good training program can cut labor turnover 28 per cent.

What should a good training program include? It should be planned to meet the needs of all employes. Since the needs of every organization are different, it is not possible to outline a standardized program that is suitable for all. However, the following five training areas should be considered by everyone planning a training program.

CONSIDER THESE TRAINING AREAS

1. *An orientation program for new employes.* The new employe wants and has a right to know under what conditions he will work and what rules and regulations govern his working day. The orientation program is extremely important, because his first impressions of the organization are probably the most important and most lasting. This training should include an overall picture of the functions of the organization and detailed information concerning such things as wages, working hours, safety regulations and the like. It should be treated as a selling job, for in reality are we not trying to sell him on the idea that our organization is the best possible place for him to work?

2. *Training in specific job skills required for job performance.* Both the new employe and the old employe must be given training in specific job skills, and the latter must constantly be given refresher courses in new and improved job methods. By giving this training and encouraging them to develop their skills and abilities we enable employes to take advantage of promotional opportunities when they occur. The job performance of most employes does not remain constant. It gets either better or worse depending to a large extent upon the direction and training that management gives. In this phase of training, the employe should learn how to learn, how to observe, how to take advantage of new ideas and wider opportunities.

3. *Training for the improvement of supervision.* If circumstances force the organized training program to be limited to one group of employes, then the concentration should be

placed on the supervisory personnel. Both industrial and public managements are pretty much in agreement that the backbone of any organization lies in its supervisory staff. Supervisors must be given training in handling employe relations, job instruction methods, cost control procedures, new technological methods and personnel policies and procedures. Too often management assumes that when a person is promoted to a supervisory position he is suddenly endowed by some magical method with all necessary supervisory knowledges and abilities.

4. *Training in public relations.* Because of the kinds of activities that are carried out by colleges and universities, an unusually high percentage of the employes have jobs involving a considerable amount of public relations. Here, again, is a skill or ability that is not just inherited. The full meaning and importance of public relations must be realized and employe training planned accordingly. This training can well start at top management levels and go all the way down the line. Training in this field should include use of the telephone, correspondence, problems of human relations and handling of complaints.

5. *Safety training.* This area of training has received and is continuing to receive a great deal of attention in industry. It is true that many jobs on college and university campuses do not have the safety hazards commonly found in industry. However, there is enough need for the practice of safety in any job to warrant the establishment of a safety training program. It is also true that extremely hazardous jobs do exist in educational institutions. The personnel on these jobs needs the same carefully planned safety training program that is found in industry.

The suggestions of these few general areas which should be given consideration in every employe training program lead logically to the next question: What technics and methods can be used for training?

The training method most widely used at the University of Wisconsin is the directed conference. The directed conference is an organized, intensive discussion of a problem, under leadership of a trained person who is equipped with questions that stimulate the discussion and who keeps the discussion on the topic.

The directed conference technic utilizes the knowledge and experience of every member of the group, and every learner is a participant. Properly handled, it is one of the most vital and acceptable training methods. It takes the paternalism and management dictatorship out of training and recognizes the ability of all participating employes. We have found that by careful planning most training needs can be handled by this conference method. Our experience has been that employes much prefer this conference technic to any other method of training. Approximately 32 per cent of the college unions with training programs use this method.

Personnel

ANDREW G. WOLF
Personnel Director
University of Wisconsin Union

STAFF MEETINGS, LECTURES

The staff meeting and lecture are two other widely used training methods. The staff meeting is generally used with administrative and supervisory personnel. When using the staff meeting, care should be taken that it does not become a paternalistic situation in which management slaps the collective hands of a bunch of "naughty" employes. It is also necessary to guard against a routine approach to all problems, for this sameness breeds inattention and soon management does all of the talking and most of the thinking. The lecture method can prove extremely valuable in certain types of situations. For example, an expert with this method can train a number of employes at one time in a new safety requirement or can inform them about a new personnel policy. At the present time, the lecture and staff meeting seem to be more widely used than does the directed conference.

The method probably most widely used, and also possibly most widely misused, in employe training is the individual coaching method. This is generally a two party learner-instructor arrangement and is most frequently used to teach an employe basic job skills. This method has great value and is indispensable, provided the instructor, who in most cases is the foreman or supervisor, is equipped with the technic for proper job instruction. Too often it is assumed that because a man knows how to do the job himself, he can teach someone else how to do it. Consequently, the follow-up on this type of training is frequently inadequate and the result too often is a confused, dissatisfied, half trained employe.

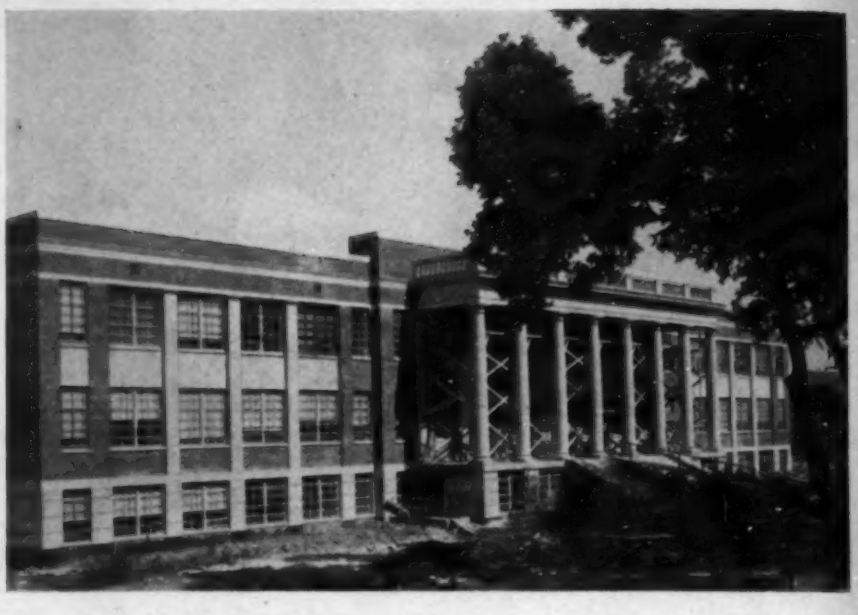
One of the best ways of doing large scale training at a reasonable cost is by use of visual aids. Such things as employes' handbooks, supervisors' manuals, bulletin boards and house organs are invaluable training aids. Films, slides and charts are also good training materials. They are especially useful in conference sessions, lectures and staff meetings.

Employe training takes time and costs money. How can a training program be justified with any degree of objectivity? Evaluating employe training is extremely difficult and methods differ with each organization and with different types of positions. Certain jobs lend themselves to production records and many times objective production charts can be used to demonstrate the value of training. Examination of cost records, material waste records and safety records may give some useful evaluation data. In evaluating employe relations training, labor turnover records, absenteeism and grievance records are a few good sources for objective information. The need for evaluating the training program is very important. Such evaluation gives valuable leads regarding the strength and weakness of the program.

The question is usually asked: "Where does an adequate training program begin?" The answer is always: "With top management." No training can ever succeed until management has crystallized its own thinking as to policy. Training then becomes the instrument for interpreting these principles and policies to all levels of employes. The training hours given to increasing the employe's knowledge and ability will prove to be time well spent.

Administration Building for a Small College

WILLARD COLLINS
Vice President
David Lipscomb College
Nashville, Tenn.



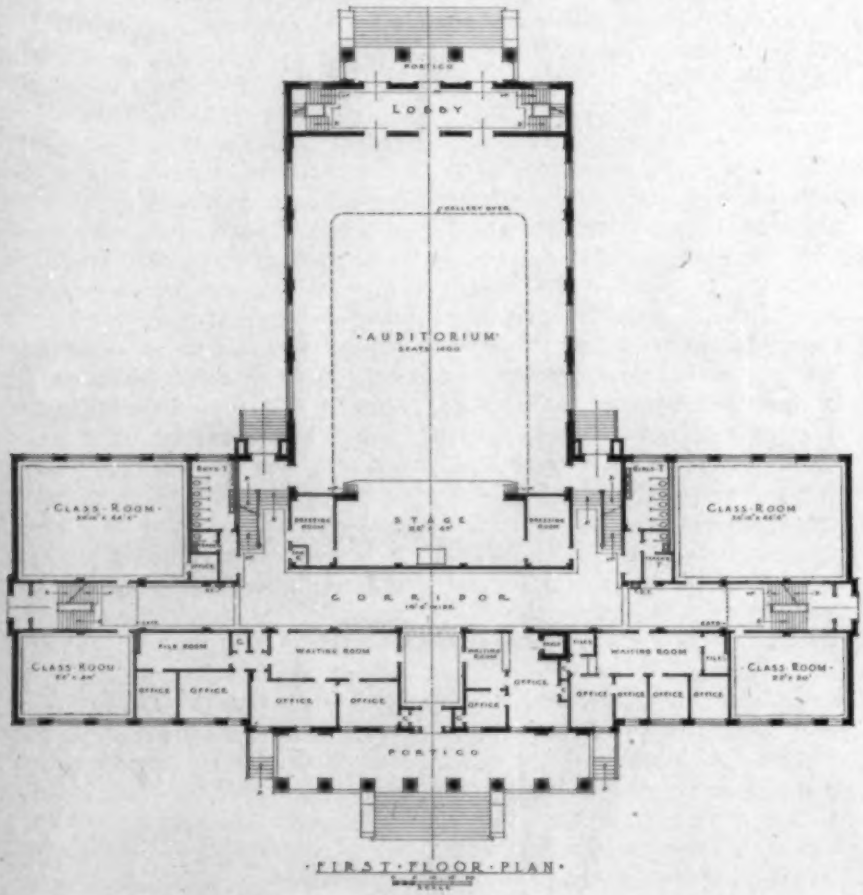
COLLEGE HALL, LARGEST UNIT OF the David Lipscomb College expansion program in Nashville, Tenn., was scheduled for completion on September 15. Construction was begun in July 1945 under the direction of George D. Waller, architect, and Nile E. Yearwood, contractor.

This building, one of seven now nearing completion on the Lipscomb campus, is a vital link in the transition of Lipscomb from a junior to a senior college. It has been constructed to accommodate 1000 college students.

The three story structure, 216 feet wide and 168 feet deep, contains 18 classrooms; a student center with soda fountain, bookstore, post office, kitchen and lounge; an auditorium with space for 1436 opera chairs, and offices for the school administrators and a suite of offices for faculty members.

David Lipscomb College offers work from the kindergarten through four years of college. The 1946-47 enrollment was 1041. The new plant will accommodate 1700 students.

Other buildings now under construction in the present $1,250,000 expansion program are: (1) Johnson Hall, a dormitory for girls; (2) Crisman Memorial Library, and (3) a central heating plant. The federal government began construction of three new science buildings on the campus during the summer.

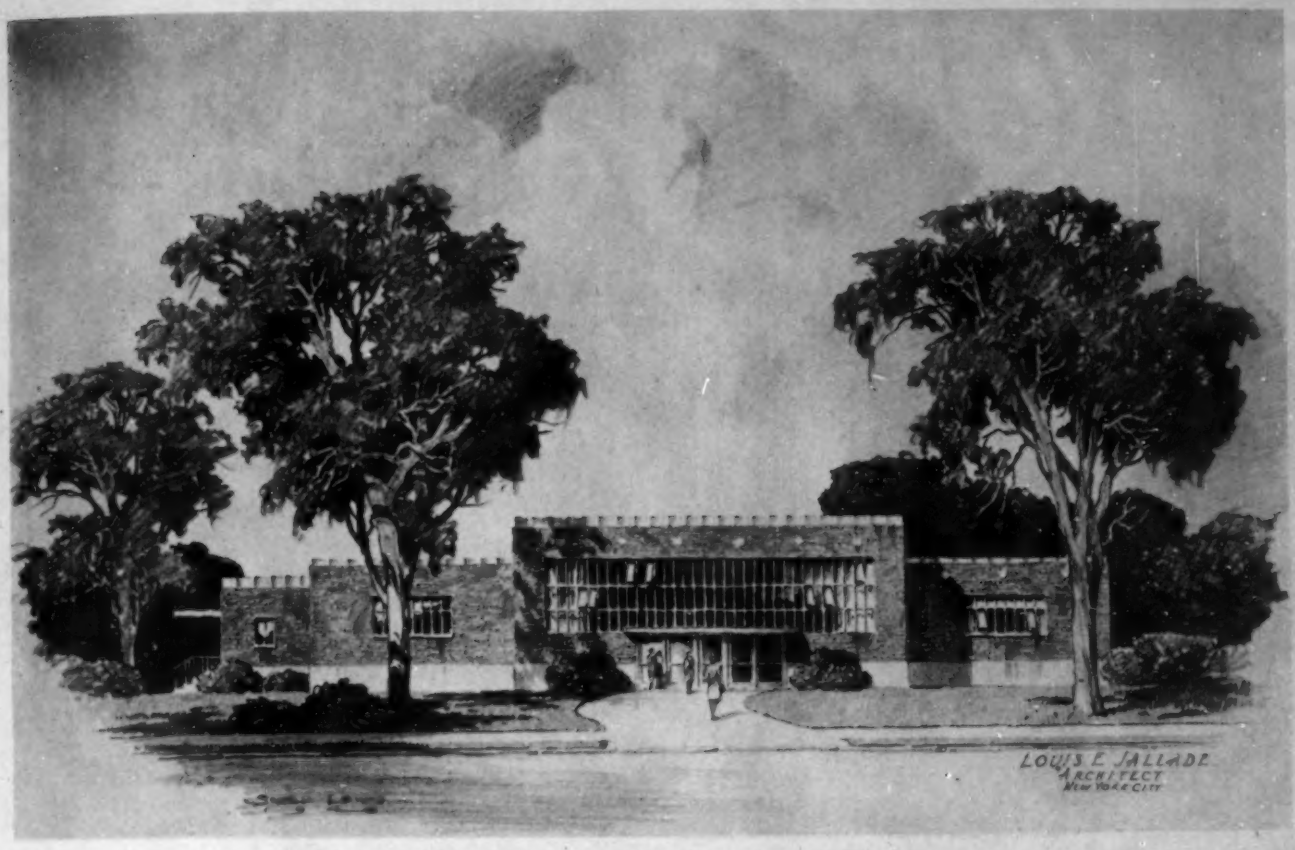


FIRST FLOOR PLAN

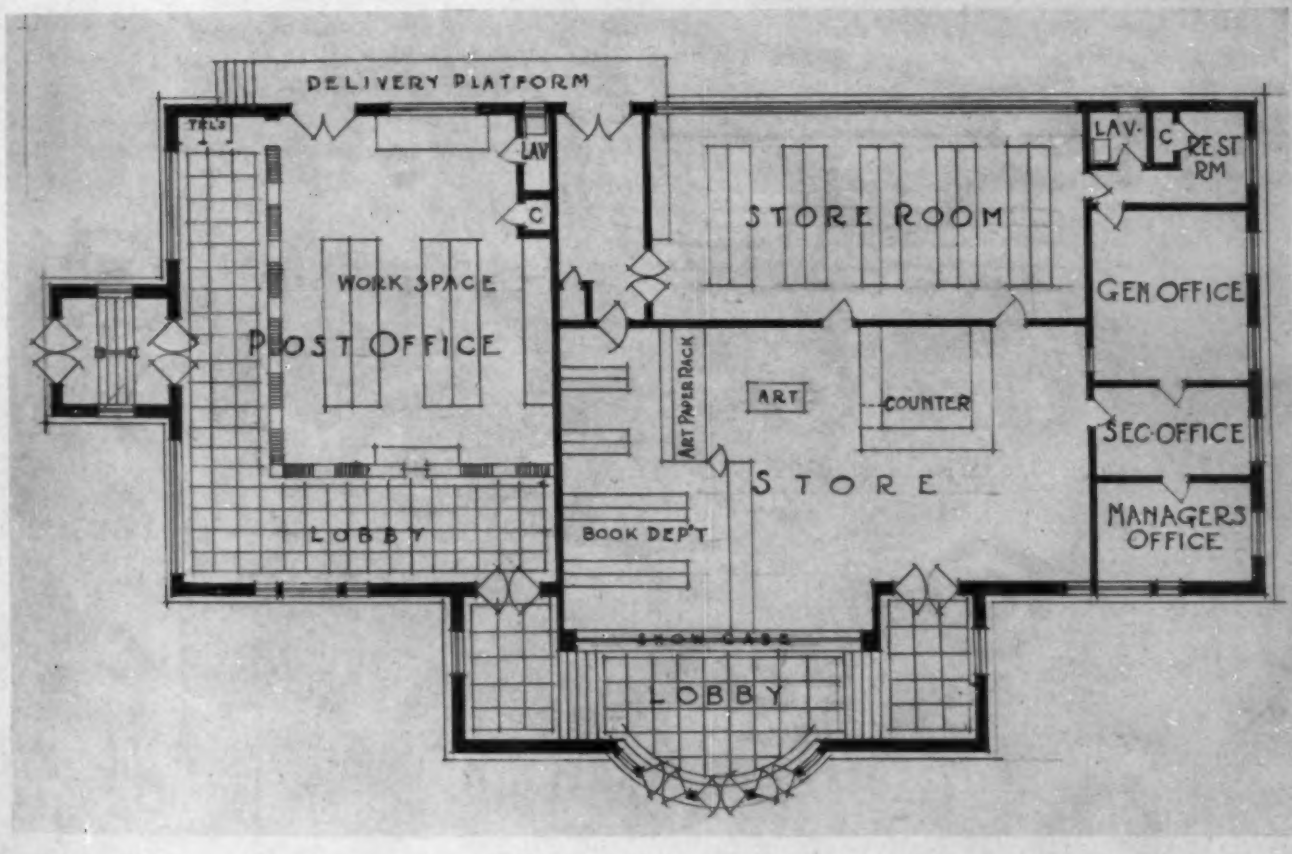
CONSTRUCTION DETAILS

CONSTRUCTION: Classed as fireproof; exterior, Colonial sand faced brick and Indiana limestone; interior partitions, hollow tile with hollow metal door frames; windows, heavy architecture projected steel sash with bronze hardware; stairways, reinforced concrete with iron stair rails.
FLOORING: Reinforced concrete; corridors and stairs, terrazzo; auditorium, offices and classrooms, asphalt tile.
WALLS: Plaster over metal lath; buff tile wainscot in corridors and stairways.
CEILINGS: All rooms, corridors and auditorium acoustically treated; auditorium, plastered beams with ornamental molding.
HEATING: Central heating plant furnishes steam heat.
AIR CONDITIONING: Provisions for future student center and auditorium air conditioning.
LIGHTING: Fluorescent ceiling fixtures.
CALL SYSTEMS: Radio, public address and intercommunication systems.
REFRIGERATION: Student center and administration building, three refrigeration rooms 304 square feet; also soda fountain.
KITCHEN: Student center, 940 square feet, gas and electric ranges with hood; modern cabinets.
SPECIAL FEATURES: Concrete slab, 1104 square feet, in front of entrance to auditorium for open air meeting.

SKIDMORE BOOKSTORE IS CAMPUS BRIGHT SPOT



SKIDMORE COLLEGE BOOKSTORE and POST OFFICE is conceived as a village store by Architect Louis E. Jallade of New York. As a sales place that needs to advertise through day and night lighting, the building has large glass areas, making it a focal point in the life of the college.



IDEAS PUBLIC INTEREST FUNDS follow a master plan

EVALD BENJAMIN LAWSON
President, Upsala College

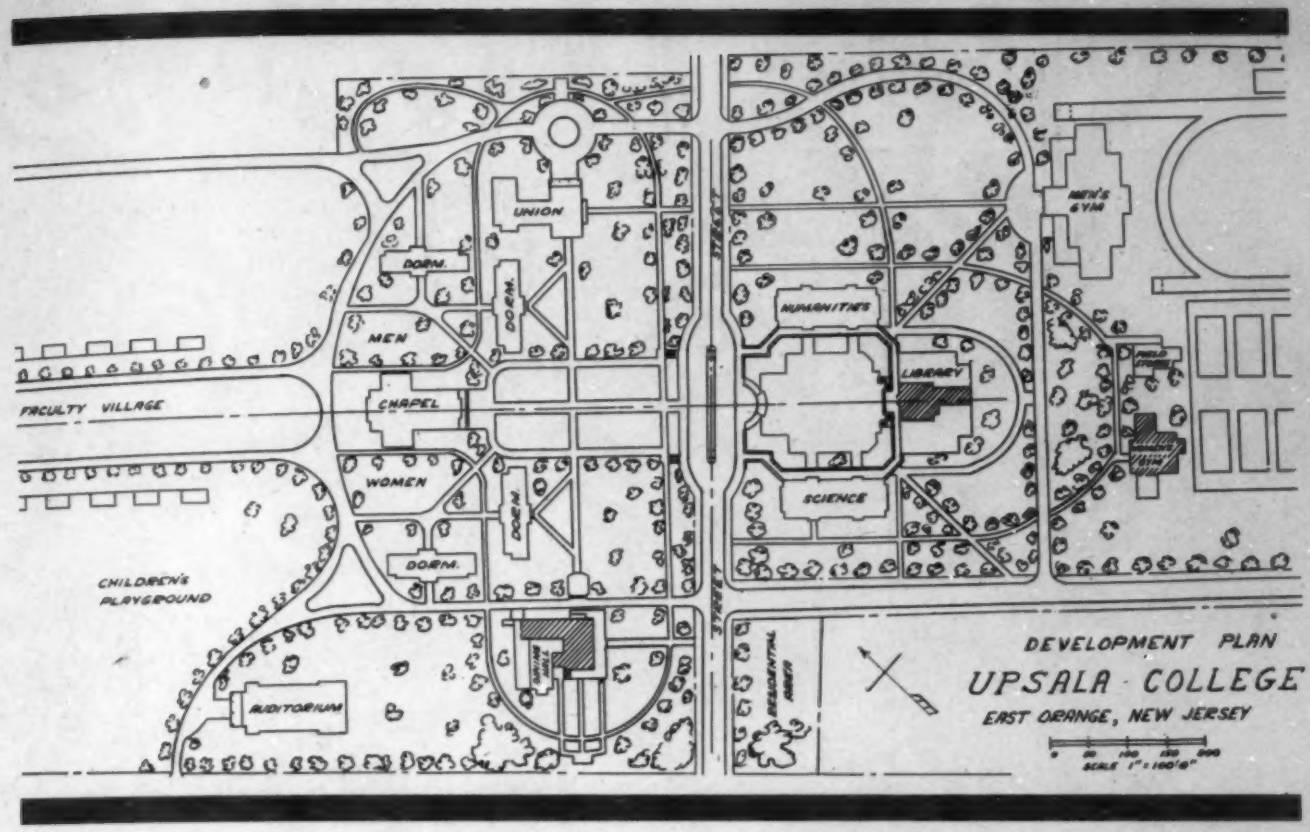
WHEN UPSALA COLLEGE RELOCATED at East Orange, N. J., in 1924, it gained a charming campus, made up of several adjacent suburban estates, but the remodeled homes never proved entirely satisfactory for classroom purposes.

As the college expanded, we were faced with the problem of procuring additional properties in the neighborhood, an expansion procedure that would seem to threaten the best interests of this church related institution.

To some of us the idea of a total new campus plan seemed altogether too brave a thought to entertain. It frightened us to hear the architect, Jens Frederick Larson, talk about "doing a real job" for we were thinking in terms of a single building. He pointed out that many colleges had suffered architectural ruin by erecting individual buildings without regard either to their total effect upon the campus or to the larger educational purposes of the institution.

In the end we found that there was only one course to follow: to go all out for a virtually new institution. Cautiously we began to talk of a fifty year building program; that sounded safe. Now we call it a fifty year building program which we hope to achieve in ten years and at the moment we are one year ahead of schedule.

Since Upsala is a church related college, it seemed logical that the chapel be placed in the center of the campus. At the same time we reasoned



that this central position should be reserved for the library, the laboratory of learning.

Gradually it dawned on us that it was not a misfortune that a street divided our campus; we could place the chapel at the center of the west campus and the library at the center of the east campus. All other proposed buildings could be related to these two focal points.

There was no desire that we grow into a large college so a ceiling of 1000 students was agreed upon with the idea that normal enrollment would be in the 800 bracket. Also the trustees were in complete agreement that Upsala should remain a resident college.

It was decided to retain three old buildings of brick construction; other structures were classified as temporary. Stately Kenbrook Hall, which serves as the women's building, was to be retained and, with the pattern set by it, Colonial architecture became the design for the future.

As we studied the first draft of the campus plan, we discovered that the architect had projected a residence hall for men on land that we did not own. The property was promptly purchased. There was no opposition to the purchase when a sound reason for it was apparent. Thus the campus design led the way to purposeful planning. Upsala's campus now comprises more than 40 acres in the heart of one of New Jersey's most beautiful residential areas.

In September of last year the dining hall addition to Kenbrook Hall was completed, the first unit in the ten year program. Fredrika Bremer Hall, the dormitory for women, was ready for occupancy last April. In the meantime work had been begun on Beck Hall, the humanities building; construction is scheduled on the first of the men's residence halls and on the college chapel.

The old and new will be joined, literally, in the future library, for portions of Old Main will be incorporated in the new structure. In front of Old Main is a tree shaded oval with steep slopes on either side. We wanted the library, humanities building and hall of science close to one another but the architect could not locate them in a gully. He has solved the problem by deciding to excavate the entire oval. This will mean sacrificing some beautiful trees but the loss will be more than offset through the unity that the complicated project will achieve.

The library and two flanking buildings will be joined by an arcade; all will face a court and sunken garden. The connecting arcade makes possible entrances and exits on two levels, thus distributing student traffic. The court will seat 3000 or 4000 for open air commencement activities. Tunnels will connect the two campuses, providing students and professors safe crossings.

The campus plan, while taking care of the normal enrollment of 800 students, allows for additional buildings at the east for the humanities and sciences and at the west for an auditorium, health building and social center. The trustees also plan to complete a faculty housing project begun several years ago.

The practical benefits of a master campus plan are many. We have studied our own institution and its needs as never before. That's healthy, for an unexamined life is not worth living. We found that problems previously considered insurmountable have been overcome. Increased interest is being shown by our supporting church constituencies, alumni, townsfolk and patrons. Funds have been received and more will be forthcoming. We have definite causes for which to solicit.

New morale is in evidence among faculty and students. The building program is a major topic of conversation. Together, we have joined our minds, hearts and hands for a great creative enterprise.

QUICKLY DOWN THE QUONSET FOOD LINE

at Michigan State

KENNETH D. LAWSON
Assistant Manager
Men's Residence Halls
Michigan State College

DINING ROOM VISTA showing one of the two 36 foot serving lines. The floor has since been covered with asphalt tile.

QUONSET VILLAGE AT MICHIGAN State College, East Lansing, consists of 112 buildings that have facilities for housing and feeding 1456 men students, who otherwise might not be enrolled. Choice of the quonset type of building was made because these units were available and could be put up easily.

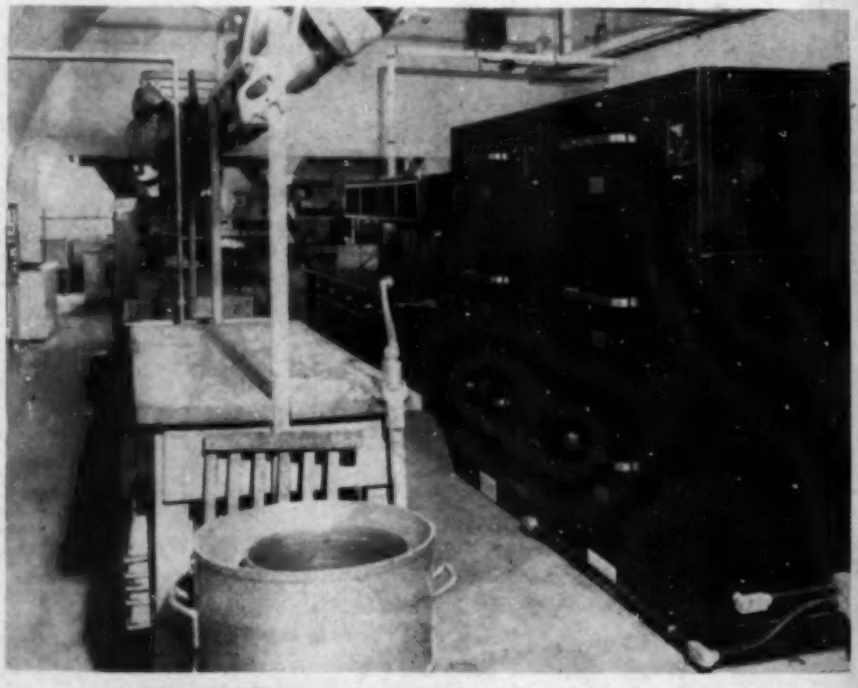
Construction started in January 1946 and 400 men were moved into the village the following April. Construction of these dormitory units continued through the summer. By June it was decided that a cafeteria was necessary.

Equipment could not be installed before September and when classes began the kitchen was not ready. For twelve days we hauled meals from a downtown restaurant, 5 miles by truck. Many of our residents did not know that our kitchen was not operating. By October 3 the entire setup was ready for operation and during our first regular school year we served almost 1,250,000 meals in our quonset cafeteria.

The cafeteria is made up of five Quonset units connected by archways. The lobby is 40 feet square and there are two wings on this building each 20 by 48 feet which are used for the protection of the students waiting in line during bad weather. Also, coat racks and bookshelves are located in these wings. The dining room, 40 by 140 feet, contains tables and chairs for 500; in the middle of the room are the silverware boxes, napkin holders and army style mess trays. These serve as the division for the two serving lines since service starts at the middle of the cafeteria and proceeds both ways toward the ends of the long serving counters.

The output of the serving lines has been speeded up considerably by placement of the refrigerated water coolers in the dining area, one on each side of the room. This eliminates the congestion usually found when the water service is part of the cafeteria line.

The outstanding feature in the necessarily swift service is the length of our serving lines. By serving mostly a straight "no-choice" menu, the number of serving stations is much reduced. The serving line is 36 feet



RANGE SECTION and COOK'S AREA. In the foreground may be seen two three-deck electric roasting ovens.

long and so the servers are able to use both hands without bumping the employes next to them. Many times it is possible for an employe to serve two items on the menu. Too, temporary slow-ups at any one point do not necessarily slow down the entire line, for the students can move freely between stations. The goal is to serve carefully without slinging the food yet rapidly enough to keep the students moving at a walk right down the line.

LARGE KITCHEN UNIT

The kitchen unit is 40 by 100 feet. This space includes employe locker rooms, a combination office and storeroom, and the bake shop, besides the dishwashing department and the various food preparation stations.

Kitchen and cafeteria are operated with a crew of 30 full time employes, including a steward and two dietitians. Student help is utilized for serving, bussing and dishwashing.

The steward plans menus, schedules the employes and supervises the preparation and service of the food. He is assisted and advised by two dietitians, one of whom directly supervises the service of each meal. The preparation of the meals is handled by three cooks, one butcher, two bakers, three salad preparation women and the usual vegetable preparation crew.

The dishwashing department is at one end of the cafeteria. Soiled trays and dishes are received at both ends, however, and there is a garbage collection station, soak tank and spray rinse unit at each end. The trays are put to soak in warm water and trisodium phosphate or some good commercial cleanser when the rush hours are on. As business slackens all trays are run through a rinser, then trucked to the dishwashing department to be further cleaned and sterilized in one of our two double tank machines. This soak-rinse-wash method is faster than it sounds and results in cleaner trays and dishes as well as in eliminating hand scraping and washing.

Weekly meal tickets are sold to students at the regular resident rate, but all residents of Quonset Village are on a room and board basis and are issued monthly meal tickets to certify their eligibility.

Quonset Village also serves as an ideal place for accommodating state 4-H Club conventions and such groups as the 1000 boys invited here for the annual Wolverine Boys' State, a student government group.

WALK-IN REFRIGERATORS, each 8 by 10 feet; in the foreground, a salad preparation table.

STEAM COOKING SECTION: At the right may be seen three three-deck sectional pressure steamers, three braziers and three steam jacketed soup kettles.

BAKE SHOP (below) showing part of the conveyor type of gas oven, an electric mixer, a bun divider and a tilting steam jacketed kettle.

MENUS FOR MONTH OF TUESDAYS

M E A T L E S S

NO COLLEGE WILL FAIL TO CONFORM to the government's grain saving program, but meatless Tuesdays and poultryless and eggless Thursdays do place an extra burden on the overworked head of the food service department.

The Citizens Food Committee asks that organizations feeding large groups do not serve major meats on Tuesday but it makes exceptions of such meat by-products as liver, kidneys, brains, sweetbreads, hearts, pigs' feet and pigs' knuckles, tripe, oxtail and tongue. That puts the dietitians back on the familiar wartime program.

On Thursdays menus should not include chicken, turkey, geese, ducks and their eggs. On other days, too, food service directors are asked to use eggs and egg dishes in moderation.

On any day, managers are asked not to serve rolls and bread or butter unless the person asks for them.

In these three ways, the cooperation of every American citizen is sought in the "Save Wheat—Save Meat—Save the Peace" program.

As an aid to food service directors, the following suggestions are made for Tuesday menus, as Tuesday is the more difficult day in planning meals under the emergency program.

LUNCHEON ENTREES

FIRST TUESDAY

Baked fillet of flounder with lemon slices, O'Brien potatoes, buttered peas

Individual chicken pie with mashed potato topping, broiled tomato or molded fruit salad

Spaghetti supreme with mushroom sauce, fresh garden spinach

Tossed green salad bowl with tomato wedges and Julienne Swiss cheese, French dressing

Scrambled eggs, broiled tomato, O'Brien potatoes

Fresh vegetable plate wth buttered spinach, mashed potatoes, broiled tomato and ramequin of escalloped onions

Open-faced vegetable sandwich with melted cheese

SECOND TUESDAY

Chicken chop suey with broiled rice, creole coleslaw on crisp lettuce leaf

Broiled fillet of haddock, cucumber sauce, Harvard beets, hash-browned potatoes

Baked beans with Boston brown bread, creole coleslaw on crisp lettuce leaf

Codfish loaf with parsley cream sauce, Harvard beets

Pan-fried kidney slices, mushroom cap, broiled tomato, hash-browned potatoes

Fresh pear and creamed cottage cheese salad, carrot and celery curls, rye crisp

Fresh vegetable plate with baked stuffed potato topped with melted cheese, broiled tomato, green peas, creole coleslaw on lettuce with raw carrot sticks

THIRD TUESDAY

Braised ox joints, parsley potato, escalloped green cabbage

Broiled Boston scrod, parsley butter sauce, buttered lima beans

Fried oysters, tartare sauce, buttered lima beans

Spaghetti and tomato with fresh vegetable salad

Chicken and celery salad with tomato wedges and crisp potato chips

Cheese fondue with escalloped green cabbage

Fresh vegetable plate with baked acorn squash stuffed with sliced apple and raisins

FOURTH TUESDAY

Baked chicken loaf, stewed tomatoes, mashed sweet potatoes

Broiled fresh mackerel, parsley sauce, buttered broccoli

Honeycomb tripe creole, buttered broccoli, old-fashioned coleslaw

Apple fritters with sirup, tossed green salad

Baked macaroni and cheese, stewed tomatoes

Seafood casserole, tossed green salad

DINNER ENTREES

FIRST TUESDAY

Fricassee of chicken, mashed potatoes, buttered string beans

Boiled beef tongue, horseradish sauce, red cabbage in sour sauce, parsley buttered potato

Baked lemon sole, pimiento sauce, buttered string beans, mashed potatoes

Roast turkey, savory dressing, cranberry sauce, buttered peas, mashed yellow turnips

Omelet with chopped chicken livers, buttered string beans, parsley buttered potato

Creamed sweetbreads and mushrooms on mound of mashed potatoes, buttered string beans

SECOND TUESDAY

Escalloped oysters, Julienne potatoes, buttered carrots and peas

Roast chicken with dressing, candied sweet potato, buttered carrots and peas, jelly

Broiled fresh mackerel, lemon butter sauce, garden spinach, parsley potato

Deep dish turkey pie with mashed potato topping, crisp green salad

Omelet with Spanish sauce, buttered garden spinach

Pigs' knuckles, sauerkraut, parsley potato

THIRD TUESDAY

Broiled liver with onions, mashed potatoes, buttered string beans

Southern fried chicken, glazed sweet potato, creamed celery

Fried deep sea scallops, tartare sauce, mashed potatoes

Stuffed baked heart, buttered string beans, creamed celery

Cheese omelet, buttered string beans, glazed sweet potato

Steamed codfish, shrimp sauce, parsley potato, sliced tomatoes on lettuce leaf

Fresh vegetable plate with glazed sweet potato, buttered string beans, creamed celery, sliced tomato on crisp lettuce

FOURTH TUESDAY

Roast duck, savory dressing, escalloped sweet potatoes and apple, orange marmalade

Broiled blue fish, mustard sauce, glazed carrots, creamed cauliflower

Broiled calf's sweetbreads with mushroom caps, buttered peas, creamed cauliflower

Casserole of escalloped chicken and macaroni, buttered peas

Salmon, egg and chive salad with crisp garden relishes

Mushroom omelet, glazed carrots

Fresh vegetable plate with ramequin of escalloped sweet potatoes and apple

How A GRANDSTAND COLLAPSED AND *Why*

First full account of official investigation of Purdue tragedy

P. E. SONESON, R. E. MILLS AND G. M. ENOS
Staff Members, Purdue University

AS STUDENTS, FACULTY AND TOWNSpeople thronged into the brightly lighted Purdue University field house last February 24 to see a crucial basketball game between Wisconsin and Purdue, there was nothing to suggest the terrible tragedy soon to occur.

The seats filled early, particularly the large grandstands, or bleachers, on the west and east sides of the playing floor. These bleachers were 125 feet long, the west section having 27 rows of seats and the east, 42 rows. In an effort to fill the huge stands completely, the loud-speaker system continually exhorted spectators to close up the gaps; however, there was no pushing or crowding.

Just before game time, the lights were dimmed as the audience stood to sing the national anthem. At this time several people in the south central portion of the east stand heard a sharp crack and felt a slight settling sensation, according to their sworn testimony later. Although the thrilling game that immediately followed constantly brought loud shouts and cheers from the spectators, there was no rhythmic mass motion of the crowd and little or no jumping up and down.

The first half ended with Purdue holding a 1 point lead. The teams left the floor, most of the 10,000 spectators stood up to stretch or move about, and several students dropped through between the bleacher seats and foot boards, either to retrieve lost articles or to reach the refreshment stands quickly. Then tragedy struck.

First evidence of the impending failure was the slow "sinking" of the south central portion of the east bleacher; then, as the collapse spread in all directions, the entire bleacher was soon surging forward and down in a fall estimated to have taken from five to ten seconds.

There was so little disorder or screaming that the sound of splintering and breaking wood and the low rumble of the falling structure were clearly heard. Through the loud-speaker system there was an immediate plea for coolness and calmness, and the rest of the bewildered audience sat still in their seats.

The cries from those caught beneath the wreckage brought instant rescue efforts; nevertheless, these were

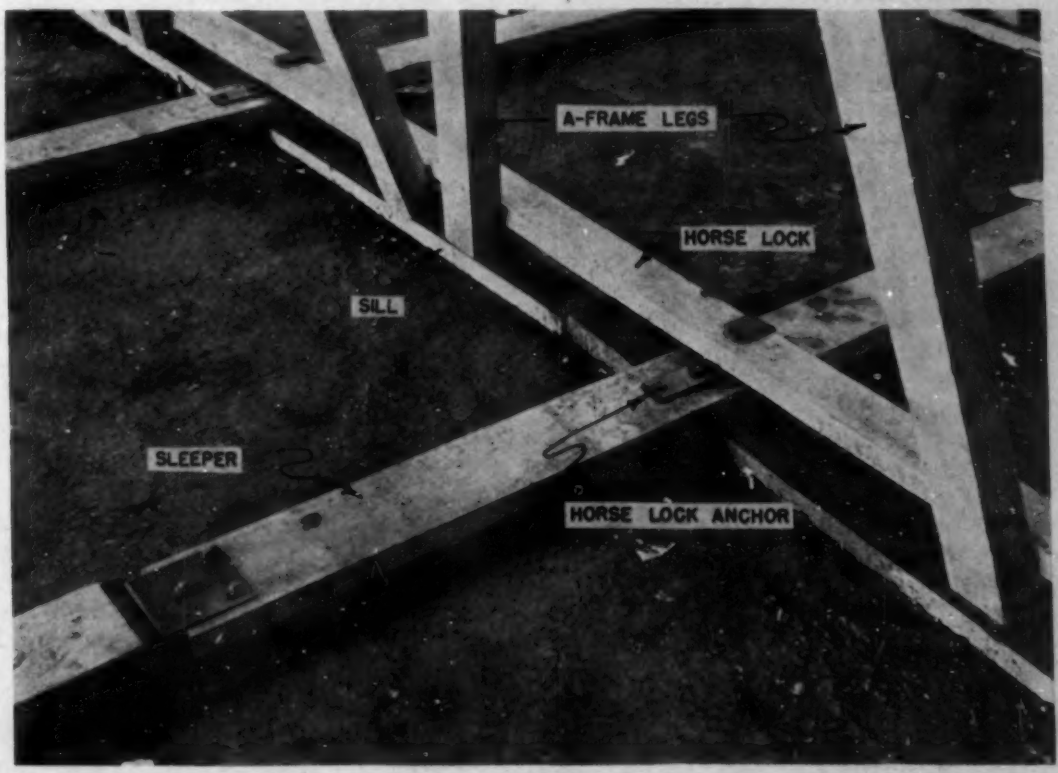


FIG. 1—This shows important parts of lower portion of the Purdue bleacher.

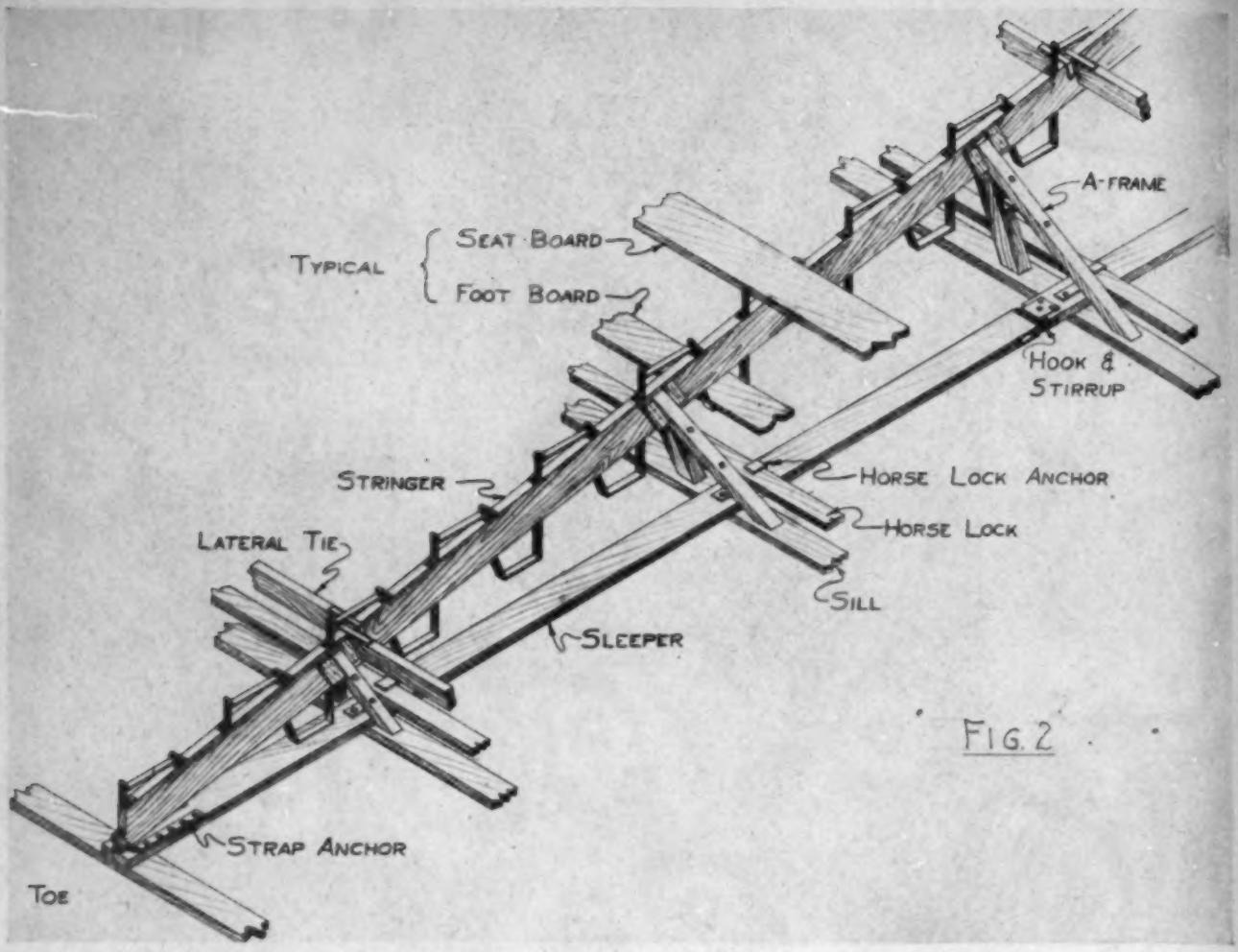


FIG. 2—Isometric drawing of bleacher part.

unavailing to one student who was removed in a dying condition and to two others who were fatally injured.

Assistance and first aid were given to many at the scene of the accident. Quickly ambulances, buses and private cars were transporting the more seriously injured to hospitals and infirmaries. As soon as the rescue work had been finished and the crowd dispersed, President Hovde ordered the field house sealed and placed under guard.

Investigation Begins

Before noon on the following day, the board of trustees of Purdue University and the governor of the state appointed an investigating committee[1] to ascertain the cause of the failure. On the afternoon of that same day the committee began its work, with Prof. J. L. Bray as chairman and Prof. P. E. Soneson as secretary.

The first efforts of the committee were to determine the conditions under which the university had acquired these prefabricated bleacher sections. According to testimony and records, the east grandstand was part of a large order placed on July 8, 1946. The bleacher sections were manufactured and furnished on the stipulation that "The construction shall conform to the underwriters' specifications, and as required for safety in the state of Indiana, and by the laws of the state of Indiana."

The ill-fated grandstand was of the low pitch, demountable type so constructed that, from front to back, each row of seats was 4½ inches higher than the preceding one. In figure 2 can be seen the typical construction and parts; these were of the same design and size as those used in the smaller, 27 row west bleacher.

The prefabricated east grandstand, ready for erection, was delivered to the athletic department of the university on Nov. 4, 1946. It was first erected at the south end of Ross-Ade Stadium for use at the Purdue-Indiana football game. Representatives of the manufacturer inspected it at that time and stated that the erection was satisfactory and well done.

Early in December this grandstand was dismantled and was reerected in the field house by the same crew, under the charge of the same foreman, a man with 23 years' experience in such work on the Purdue campus. All of this work was done by the athletic department independently of the physical plant department of the university.

Beginning December 9 the stands were occupied by capacity crowds for

[1]The committee membership was: Bert J. Westover, director, Administrative Building Council; Paul Kerr, member of state senate; Henry A. Kraft, member of state house of representatives; Carter Bowser, state fire marshall; G. W. Hadley, assistant attorney general; R. T. Hamilton, superintendent of physical plant; P. E. Soneson, associate professor of architectural engineering; R. E. Mills, associate professor of civil engineering; E. R. Martell, head of department of forestry; J. L. Bray, head of school of chemical and metallurgical engineering; Brenton A. Devol, university legal counsel; William A. Hanley, trustee. Observing members were Wally Cook, president of student senate and Ed Karpick, editor of the Purdue Exponent.

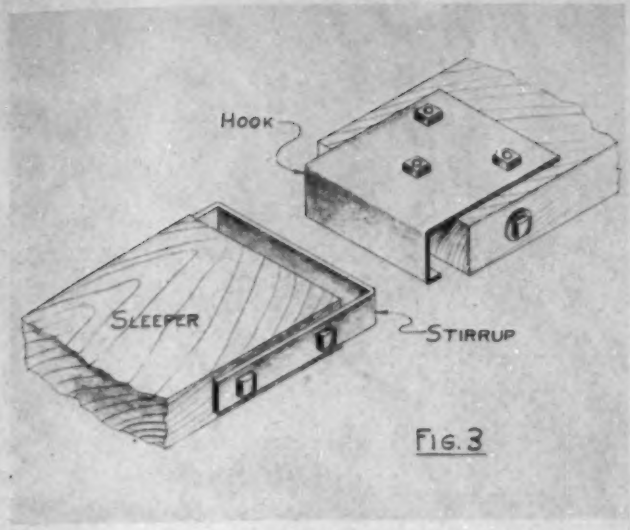


FIG. 3—Isometric drawing of the connection for the sleeper.

11 Purdue home basketball games and by smaller crowds for several high school contests. Before each game the stands were systematically inspected by the erection workmen; however, this inspection naturally was not in the nature of a microscopic examination. Since this kind of prefabricated structure is universally accepted on the warranty of the manufacturer, the athletic department did not deem it necessary to have either the design analyzed or the many parts individually subjected to strength tests.

Design of Bleacher

The ordinary type of demountable bleacher is commonly constructed of wood with various iron or steel brackets, clamps, bolts and other connecting devices that serve to hold the main wood members in proper alignment and relationship with one another. Such was the general construction of the two large bleachers in the Purdue field house.

A detailed plan of the construction of a typical bent or section of the Purdue bleachers is shown in figure 2. It will be noted that the seat and foot boards are supported by continuous wood stringers. Each stringer in turn is supported by a series of A-frames, perpendicular to it and spaced at 6 foot intervals along its length. The bottom or feet of the A-frames rest on wood sills as shown in figure 1. Since the loaded stringer tends to slide forward (Fig. 2), its toe must be securely anchored; also the feet of the A-frames, which tend to slide backward. This anchorage is accomplished by means of a continuous member, called a sleeper, which is attached to the toe of the stringer and holds the feet of each of the A-frames by means of the horse locks (Figs. 1 and 2).

Because of its 82 foot length the sleeper was made of six individual timbers joined end to end by metal hooks and stirrups as shown in figure 3. Twenty-eight of these typical bents constituted the principal framework which supported the 42 rows of seats in the east bleachers of the field house. (See footnote 2 on the next page.)

Members of the committee heard the account of the bleacher collapse from more than 200 persons, of whom 58 were eye witnesses who testified under oath. The testimony indicated quite consistently that the failure began at a point slightly south and forward of the center and spread through the remainder of the stand, with the ends and rear the last portions to go down.

A complete and critical inspection of all the distorted, damaged, cracked and broken parts of the collapsed east bleacher sections showed that two types of material failures were general, and occurred in a regular pattern: (1) all the 2 by 8 inch stringer timbers were badly twisted and broken and (2) many of the metal hook-and-stir-

FIG. 4—Rear view of A-frames showing the feet pushed backward.

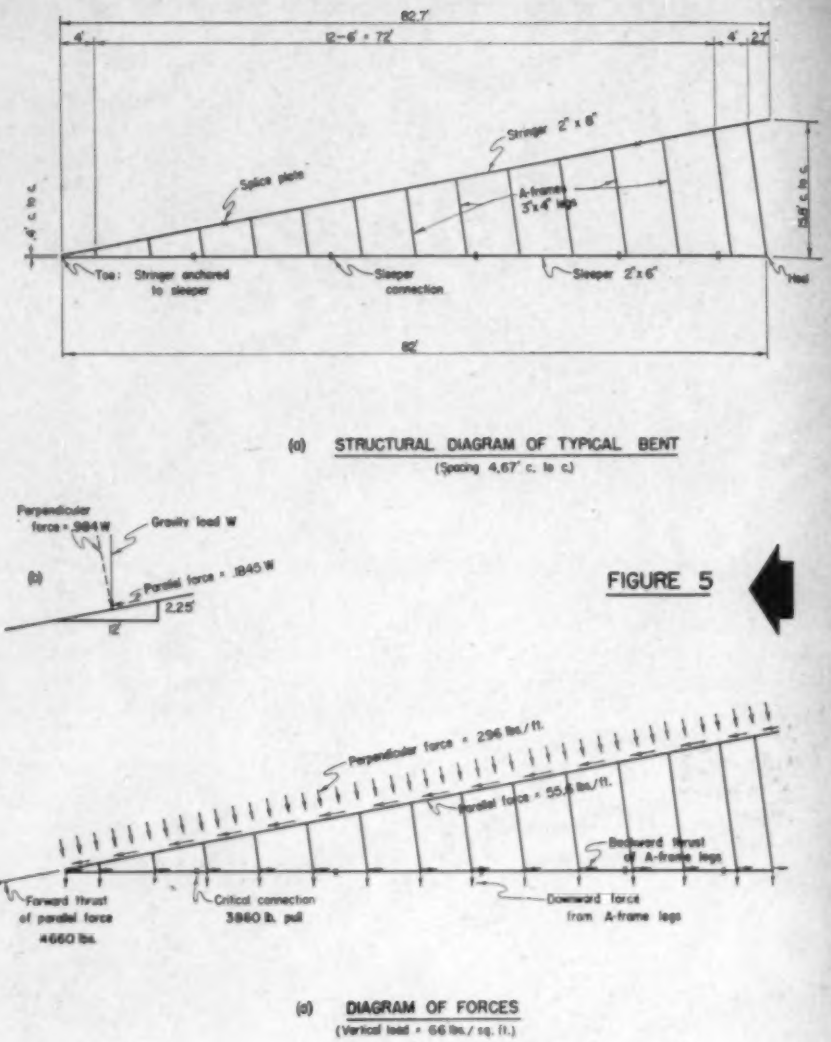
rup connections of the sleeper timbers were distorted or broken.

Upon close examination it was evident that most of the breakage was in the rear portion of the stringers and that their toes had been pushed toward the basketball court. The A-frames had fallen forward, and the foremost connection (hook-and-stirrup) of each sleeper was broken or otherwise separated so that a continuous gap of from 4 to 5 feet occurred as shown in figure 6. Farther toward the rear several additional sleeper connections were separated but only slightly displaced. At the extreme rear the long legs of the A-frames had slid backward, as shown in figure 4.

It was recognized that a thorough analysis would be necessary in order to understand these phenomena and that several possible causes for the failure would have to be explored: (1) Was there a severe overload; was the structure able to support the actual loads applied; (2) were some of the timbers or metal parts defective or otherwise weak?

Severe Overload?

The fatal east stand had been marked off in seat spaces 17 inches wide with the rows 24 inches back to back, resulting in a total of 3402 seats and three aisles. When the game started, most of the aisle space was occupied and a count taken from motion pictures showed, with fair accuracy, that 3528 persons were on the stand.



When the average weight per person is taken as 150 pounds, this number of people produce a total live weight of 530,000 pounds, or slightly less than 53 pounds per square foot of the bleacher's floor area. This is not an overload because present day building codes, ordinances and state laws require this type of structure to be able to support a live weight, including impact, of 100 pounds per square foot of floor area.

Weak Supports?

An analysis was made of the forces in a typical bent, that is, the assembly of a stringer, sleeper and the supporting A-frames connected to them. The whole stand is made up of 28 of these bents, with the seat and foot boards laid across them. No drawing was available from the manufacturer so the university's architect made one by measuring parts of the wreckage; from this drawing the analysis of figure 5 was developed.

The dead load used in the computations is made up of the weight of the stringers and of the parts they supported; this was 8 pounds per square foot of floor area. The live load used is based on 150 pounds a person, an average weight obtained from the Purdue Health Service records, and when each seat space of 17 inches along the seat boards is assigned such a load, it amounts to 53 pounds per square foot of floor area. When a person rises to his feet quickly, it is known that an additional force, or impact, is caused

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*The rise of each seat was 4½ inches and the spacing of rows was 24 inches. The stringer timbers were 2 by 8 inches, the A-frame legs 3 by 4 inches, the sleeper timbers 2 by 6 inches, and the sills 2 by 6 inches (Fig. 2). For the sleeper splices the stirrups were 1 by ⅛ inch bent steel bars and the hooks were 4½ by ⅛ inch bent steel plates; all bolts were of ⅜ inch diameter (Fig. 3).

Each stringer is a continuous sloping beam supported by 14 A-frames mounted perpendicular to it. The seat loads, acting vertically, produce force components perpendicular and parallel to this continuous stringer, resulting in both a bending action and an axial thrust. The feet of the sloping A-frames thrust backward on the horse locks, thus transmitting this force to the sleeper, which becomes a tension member when it is anchored to the stringer toe. Each of the single leg supports, substituted along the north and south ends in place of 22 of the 28 regular A-frames, carried only half as much load as the latter and were sufficiently strong in every respect. In fact, half the single leg supports could have been removed (alternately) and still the structure would have functioned without failure. Witnesses who had been seated over the end stringers testified that these members were not the first to fail but were actually among the last to go down.

momentarily and this has been estimated conservatively at 10 per cent of the live weight, or 5 pounds per square foot.

Combining these loads of 8 pounds, 53 pounds and 5 pounds gives 66 pounds per square foot, the total load estimated to be acting at the time the failure began. *The law of Indiana requires a load of 100 pounds to be used for the effect of live load plus impact for the design of this type of structure.*

Figure 5 (b) shows how this load, acting vertically, can be resolved into a force perpendicular to the stringer plus a force parallel to it, the amount of each force depending on the slope of the stringer. When these forces are applied in 5 (c), it is evident that the stringer is being bent by the perpendicular force, which does not overstress it even when a live load of 100 pounds per square foot is applied. The parallel force causes the stringer to try to slide forward and the A-frame legs to push toward the rear, as shown in the diagram. To prevent the stringer from sliding forward, its toe is anchored to the front end of the sleeper.

The A-frames do not slide backward as long as their feet are held in place and their thrust is exerted on the sleeper through the connections already discussed and clearly shown in figure 1. As shown in the diagram of 5 (c), the resulting pull on the foremost sleeper connections must hold in balance the forward thrust of the stringer toe and the backward thrusts of the A-frame legs. This "pull" is 3860 pounds on the basis of the previously estimated load of 66 pounds per square foot. (To meet the requirements of Indiana law for 100 pounds per square foot for live load and impact, this pull would be 6310 pounds as shown in 5 (d) and the sleeper connections should be designed in accordance.)

The forward thrust of each stringer and the resulting pull on the foremost connection of each sleeper are proportional to the total load supported; thus when either the load per square foot or the number of rows of seats is increased, these forces are increased proportionately.[3]

What would happen if each of the foremost sleeper connections gave way under this pull of 3860 pounds? The stringer would slide forward and down; the A-frames would fall forward, and the weight of people would break and splinter the stringers because their supports would be gone.

This is exactly the scene that faced the investigating committee when it began its work. Since the structure collapsed, it is evident that the bleacher had no additional strength, or factor of safety. Although it supported such loads during the previous basketball games, the reasons for its eventual collapse are explained by the many tests and the results of the examinations of the materials.

[3]The stringer slope of 2.25 in 12 is repeated in the A-frames which are perpendicular to it. The continuous stringer transmits the perpendicular force to the A-frames which behave as reactions. Analysis by area moments yielded the moments and shears in the stringer and the force delivered to each A-frame. This force as resolved into its vertical and horizontal component forces is shown at the sleeper level in Fig. 5 (c). Starting at the heel and advancing toward the toe, these horizontal thrusts accumulate, resulting in an increasing tension in the sleeper; at the toe this total backward thrust must hold in balance the forward thrust of the stringer.

Defective Wood, Metal?

Since the stringer timbers and the hook-and-stirrup connections of the sleeper timbers showed the most damage throughout the wreckage, it seemed logical to assume that the failure of one or both of these might have been the primary cause of the collapse of the bleachers (Figs. 2, 3 and 7). Representative samples of these parts were obtained and subjected to extensive laboratory tests.

Loading tests were conducted on 14 standard sized wood beam test specimens taken from the undamaged portions of the stringer timbers; these specimens included samples from typical stringer timbers and also from those which appeared to have brash or cross-grain failures.

Individual test results for strength and other properties show all of the wood samples to be well within the requirements ordinarily covered by standard grading rules. The average test values compare favorably with average values shown for seasoned, air dry Douglas fir wood, coast type, as reported in the U. S. Department of Agriculture Technical Bulletin No. 479.

These test results confirm the opinions of R. F. Luxford of the Forest Products Laboratory, Madison, Wis., Knute Anderson of the West Coast Lumbermen's Association and others, that the wood was of a very high grade Douglas fir. Also, since calculations show these timbers were not overstressed, it is reasonable to conclude that the wood was in no way

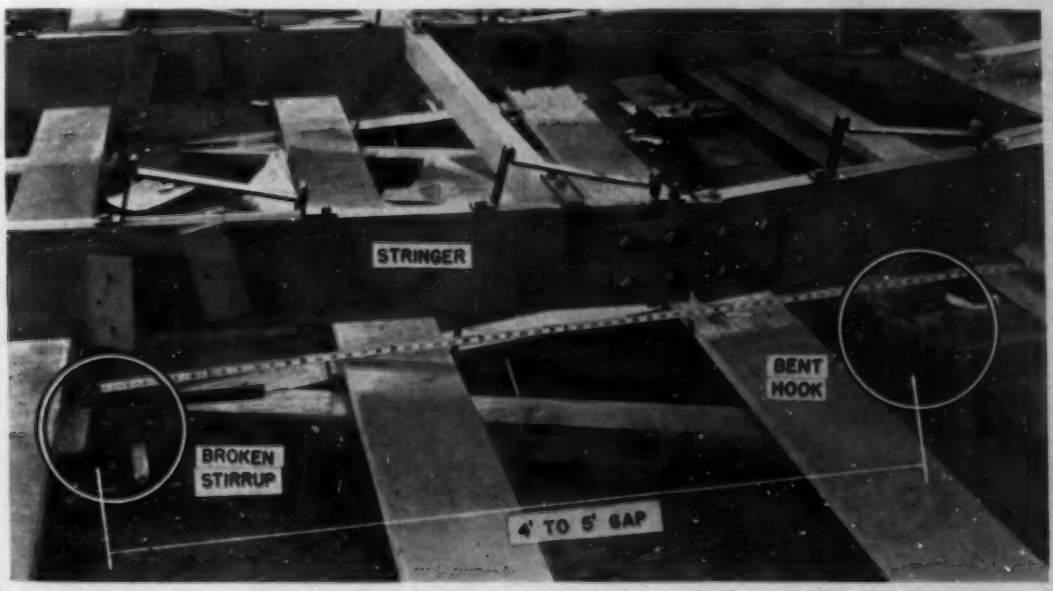


FIG. 6—Foremost sleeper connection showing wide separation of hook and stirrup connectors.

responsible for the primary failure of the structure.

Tension loading tests were conducted on 15 of the metal hook-and-stirrup connections attached to their sleeper timbers, as shown in figure 8. Ten of these specimens were selected from the collapsed east bleachers and five from the standing west bleachers.[4] All connector samples were chosen from regions where the stresses were low and from pieces which showed no apparent evidence of previous overstrain or distortion from use, as indicated by their shape and undisturbed paint coating.

[4]Extreme care was exercised in selecting the 15 test samples of the metal hook-and-stirrup connector assemblies in an effort to avoid testing of a previously overstrained, distorted or otherwise damaged piece. For this reason, nine of the 10 samples selected from the collapsed east bleachers were taken from the back part of the stands where only low stresses had occurred. Also, of the five samples selected from the standing west bleachers, all were taken from the back part of the stand. The parent metal from which the hooks were formed was approximately ⅛ inch thick by 4½ inches wide, while that from which the stirrups were formed was approximately $\frac{1}{16}$ inch thick by 1 inch wide (Fig. 3).

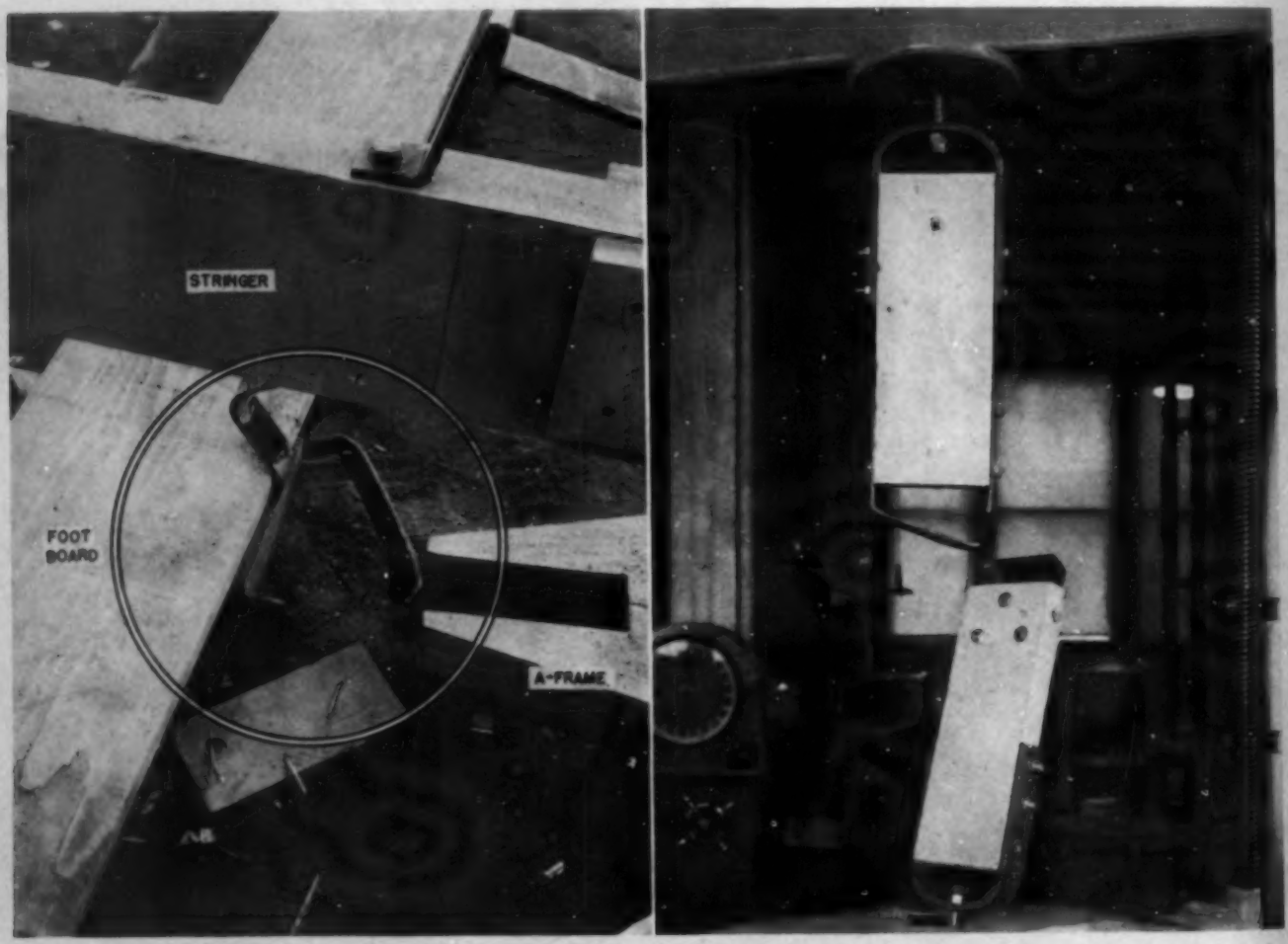
When loaded in a testing machine, these metal hook-and-stirrup connection assemblies failed at an average load of 3874 pounds, with individual ones failing between 2520 pounds and 4660 pounds. Comparing this average breaking load of 3874 pounds with a calculated force of 3860 pounds (Fig. 5) that probably was acting on the foremost of these metal hook-and-stirrup connectors prior to the collapse, it is evident that they were critically stressed and that failure was impending. If one of the weaker connectors, by chance, had happened to be located in the foremost section, its failure could have been the beginning of the final collapse.

Calculations based on the requirements of the Indiana state law for live load plus impact effect on such structure shows that a force of 6310 pounds should have been considered in the design of this front line section of connectors. This far exceeds the 4660 pounds breaking load of the strongest connector tested.

These hook-and-stirrup connectors were formed into shape, as shown in figure 3, by bending the metal in a cold state. In forming these right angle bends, the metal was bent so sharply that a deep crease was produced on the inside of each corner, as shown in the magnified view of figure 9. This creasing seriously impaired the effective strength of the stirrups as evidenced by the fact that every observed stirrup fracture had occurred through this corner crease.[5]

Supplementing the tests just described, 19 additional metal samples were obtained from various parts of the wreckage for further laboratory studies. Four of these samples were analyzed chemically and several were

[5]In 11 of the 15 test samples, failure developed when the hood straightened out and slipped from the stirrup; in the other four samples, one end of the stirrup strap failed at the corner crease. A careful examination of these specimens after test showed that no splitting of the sleeper timbers or serious distortion of the anchor bolts had occurred during the test. The stirrup strengths given above are based on a steady tension pull exerted on the specimen; if part of the load could have been applied as a sudden pull, or impact (in imitation of the structural loading), the strengths might have been altered slightly.



FIGS. 7, 8—Closeup (left) of fractured stirrup. Loading test (right) showing failure of the metal parts. Compare this with Fig. 3 and view at left.

subjected to examination under the microscope, to hardness tests and to cold bend tests.

As might be expected, there were some slight differences in chemical analysis and in appearance under the microscope. As a result of these tests, it can be stated that the various metal parts, with the exception of the cast-iron seat clamps, were low carbon steel in a soft condition.

The center strap sections were removed from several stirrups and subjected to direct tension tests. The average of these tests showed that the parent metal began to yield at about 40,000 pounds per square inch and broke at about 53,000 pounds per square inch. These results are in agreement with the results of the chemical analyses, hardness tests and microscopic examinations.

Figure 9 is an enlarged photograph of an etched cross section of a stirrup corner and clearly shows the corner notch or crease that resulted from the cold bending of the stirrup. The repeated loading of the bleachers during the several games caused repeated pulling on the sleepers, which induced repeated pulling and bending forces on the metal hook-and-stirrup connections; the creased corners greatly reduced the ability of the stirrups to maintain resistance to this repeated bending force.

A homely example of this crease or notch effect is the trick of notching a wire, by cold chisel or file, and then breaking it easily by a few repeated bends.

All attempts to straighten the corner bend of the stirrup resulted in a fracture through the corner notch or crease. In comparison a straight portion of the stirrup could be bent from 10 to 15 times through 180° before a fracture developed.

The Culprit

It is evident from the many observations and tests that the weakness of the hook-and-stirrup connectors of the sleeper timbers was the primary cause of the collapse of the bleachers. Friction between the parts of the structure represented the only probable margin of safety for the loaded bleachers, and it seems logical to conclude that only a small additional impact force would have been necessary to overcome this frictional resistance of the members, thus causing a series of individual failures of the foremost sleeper connections which quickly resulted in the complete collapse of the entire east bleachers or grandstand.

Additional Evidence

During the examination of the wreckage there were found, among the foremost sleeper connections, *two adjacent stirrups that had fractured surfaces which showed old rust covering most of the fractures. No other fractures of the steel parts exhibited any sign of rust.* It is concluded, therefore, that these stirrups had been badly cracked at some earlier time and that rust had developed in the cracks before the crash occurred. Indeed, the rusting process, once started in the cracks, probably hastened the deterioration.

These two greatly weakened stirrups were on the 9th and 10th sleepers from the south end and correspond definitely with the area in which witnesses testified that the failure began, particularly those witnesses who felt the slight settling sensation just before the basketball game began.

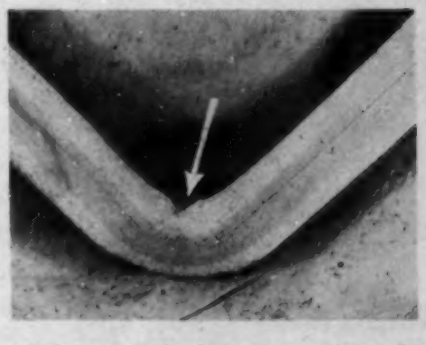


FIG. 9—Etched cross section of stirrup corner, about four times natural size. Note the notch produced by cold bending the stirrup steel to form the right angle.

Summary

1. The failure began in an area just south and forward of the center of the east bleacher; this was established by the testimony of witnesses and agrees with the location of the sleeper connections that had rusty fractures on the broken stirrups.

2. The alterations of the structure by substituting single leg supports for the several A-frames along the north and south ends in no way impaired the structural performance of the bleacher. Since only half a normal load was carried by the end sections, these single leg supports were sufficiently strong in every respect.

3. The marked seats and aisles were occupied by 3528 people; the resulting estimated live weight and impact force acting at the time of failure was 58 pounds per square foot of floor area, considerably less than the 100 pounds required by Indiana law for the design of such a structure.

4. Calculations of the bleacher design show that none of the timber parts was overstressed and, since the laboratory tests proved their high quality, it was concluded that the wood was in no way responsible for the failure of the structure.

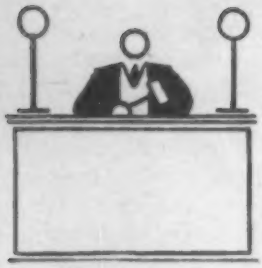
The low carbon steel used in the metal parts was not found to be defective, but the section area used in the hook-and-stirrup connections was not sufficient to carry the applied loads.

Calculations based on the estimated bleacher load show that a force of 3860 pounds was acting on the foremost of the metal hook-and-stirrup connectors of the sleeper timbers. Laboratory tests of similar sleeper connectors showed an average breaking load of 3874 pounds. Calculations based on the requirements of the Indiana state law for live load plus impact effect on such structures show that a force of 6310 pounds should have been considered in the design of this foremost line of connectors. This value does not incorporate a factor of safety commonly included in good design.

The load carrying ability of the stirrups was further reduced by cold bending of the metal and the structural damage resulting from the creasing on the inside of the corners. Both of these conditions were aggravated by repeated loadings of the structure, which gradually developed cracks at the corners of some of the stirrup connectors, as evidenced by old rust on two of the stirrup fractures found in the area of the initial failure.

These observations and test results show that the sleeper connectors were not only inadequate and weak but also structurally unsound for the function they were intended to perform.

5. That collapse of the bleacher was impending each time it was loaded has been established and verified by many painstaking observations, laboratory tests and stress analyses of the loaded structure. The final failure was a direct result of the gradual weakening of the hook-and-stirrup connectors of the sleeper timbers, particularly those located in the south central portion of the ill-fated bleacher.



MOVING A College

M. M. CHAMBERS
American Council on Education

THERE WAS ONCE WIDELY PREVALENT a belief that the ideal location for a college was in bucolic environs, secluded from the mundane activities of the workaday world and distant from the rushing crowds of cities. It was thought that learning could be best cultivated in an isolated academic community wherein student groups and teachers could lead a closely knit and distinctive institutional life of their own, the studious and contemplative life of an academic retreat. Especially in the case of denominational colleges, it was often felt that the institution should serve primarily the sons and daughters of clergymen and lay members of the church and young aspirants to the clergy, drawn from homes in many states and from missionary fields in far corners of the earth. After a few years in the academic grove, remote from the distractive worldly amusements, temptations and preoccupations of populous centers, the students would fare forth to far-flung stations, carrying with them everywhere the character and habits fostered by alma mater, an institution tenaciously maintaining its unique tone and atmosphere.

PUT COLLEGE NEAR PEOPLE

The foregoing theory has a history of achievement to its credit and for some institutions it may long continue to be applied, thanks to the tradition of a pluralistic society permitting and encouraging varied allegiances and cherishing individual freedom of choices. However, it has ceased to be the exclusive or dominant theory of higher education in America. It is challenged by the practical circumstance that facilities for higher education should be located with reference to their accessibility to a local population of college age; that a college may gain both financial support and great cultural advantages from proximity to and interconnection with the complex ongoing life of a populous center and thereby can strengthen and perpetuate its offering of the greatest good to the greatest number.

So it has sometimes come about that a charitable benefactor of large means, wishing to place on a firmer footing a venerable and reputable institution of slender endowment and obsolescent plant, makes the gift conditional upon its moving to a new location. One of the most recent examples of this kind is afforded by the formulation of a contract between the Z. Smith Reynolds Foundation, Inc., and the trustees of Wake Forest College in North Carolina.

CONTRACT WITH TRUST

It is agreed that the college will keep its historic name and maintain its present endowment intact; it will move from Wake Forest to a site in or near the thriving city of Winston-Salem and build a plant to accommodate 2000 students. The Baptist State Convention will bear the same relations to the college as in the past and will pay to it annually a proportion of the convention funds not less than the proportion thus paid during the calendar year 1946.

The Reynolds Foundation, on its part, agrees to accumulate all its income up to $350,000 and pay it to the college not later than 1952 for expenses of moving and building; thereafter it will pay the college each year all its net annual income up to $350,000.

After protracted deliberations had led to the successful negotiation of this contract, the four principal parties, including the college, the Baptist State Convention, the Foundation and the Safe Deposit and Trust Company of Baltimore as sole trustee of the Zachary Smith Reynolds Trust from which the foundation receives its income, joined in a friendly suit to test its validity.

In the opinion of the supreme court of North Carolina, the words of Chief Justice Stacy were in part as follows: "Is the contract submitted for adjudication valid and enforceable? The trial court thought it was. We approve. Wake Forest College has had a long and honorable career. . . . We should not deny to this great institution . . . this vista of a new dawn and this vision of a new hope."*

The decision is in harmony with the general current of equity jurisprudence, which strongly favors allowing college trustees a broad discretion as to the execution of their educational trust. In earlier and somewhat analogous cases it has sometimes been argued that a college is not ordinarily conceived as an ambulatory institution. Sometimes it has been contended that the corporate charter of a college fixes its location forever, but usually it has been held that the mention of its place of operation is only incidental—intended, perhaps, to be permanent, but not to be construed as perpetual.

The most serious possible obstacle exists in cases in which parts of the college endowment consist of gifts expressly conditioned upon its continuance in the same location, with positive provision for reversion to the donors in the event that it ceases operation at that place. Such provisions are rare; on occasion they have been enforced at some loss to the institution. However, if many years had elapsed after the making of such a gift, a court of equity would scan closely the instrument of gift to discover a possibility that the special trust had already been fully executed or evidence that the donor's general intent to aid higher education outweighed and transcended his thought of a particular and closely restricted locale.

*Z. Smith Reynolds Foundation, Inc., v. Trustees of Wake Forest College et al., (N. C.), 42 S. E. 2d 910 (1947).

SAFETY CHECK LISTS FOR STUDENTS

VIVIAN WEEDON

Staff Representative, Higher Education Committee
National Safety Council

TO CUT DOWN FIRE LOSSES AND ACCIDENTS OF all sorts resulting from student thoughtlessness, Stephens College, Columbia, Mo., developed a check list of behavior practices for safe living on the campus. This list was worked out with the help of the National Safety Council.

With some slight revisions the Stephens College lists have been released to the National Safety Council for distribution to colleges. The council is glad to have colleges make desirable editorial changes in the lists in order to personalize them.

Results of experimentation with these lists are being sought by the safety council, which regards them as experimental in their present stage of development.

LOOK AROUND YOUR ROOM

	Always	Seldom	Never
1. Do you keep your room orderly, having a place for everything and everything in its place?			
2. Do you keep your desk drawers closed?			
3. Do you immediately pick up off the floor small objects, such as pencils, books, golf balls, shoes?			
4. Do you make small rugs secure by sewing or taping pieces of rubber on each corner on the underneath side?			
5. Do you have rugs repaired whenever edges become frayed or holes appear?			
6. Do you keep passageways clear of electrical cords, chairs, and golf clubs?			
7. Do you avoid running extension cords over nails and around pipes and radiators?			
8. Do you have frayed or worn electrical cords repaired immediately by an expert repair man?			
9. Do you check your electrical heating pad frequently to see that cord and plug are in good repair, taking it to a qualified electrician for inspection if you question its safety?			
10. Do you switch on the light before entering the room?			
11. Do you have a lamp that can be reached and turned on without getting out of bed?			
12. Do you avoid sitting in windows and leaning against screens?			
13. Do you have a nonflammable wastebasket?			
14. Do you know to whom to report any hazard, such as loose window screens, cracked wall or ceiling plaster, broken light switches, loose light fixtures and broken chairs?. Do you report such hazards immediately?			
15. Do you cooperate with the hall counselor and hall proctor in following the rules, such as those concerning smoking, ironing, cooking in areas provided for those purposes, that will ensure safety for yourself and others?			

TAKE A LOOK AT YOUR CLOSET

	Always	Seldom	Never
1. In placing suitcases, boxes and other articles on shelves, are you careful to place them so that they will not fall?			
2. Do you keep shoes and galoshes in a shoe bag, on a rack or on a shelf?			
3. Do you keep soiled linen and clothing in their proper containers?			
4. Do you check the rod supporting clothing to see that it is fastened securely to the walls and will not come out of the brackets?			
5. Do you keep doors and walls free from hazardous pegs and nails?			
6. Do you keep the floor clear of rubbish?			
7. Do you avoid climbing on boxes or chairs and other makeshift ladders or step stools?			
8. Do you keep closet doors closed?			
9. Do you use a flashlight rather than matches while in your closet?			
10. Do you "park" your lighted cigarets securely in a nonflammable ash tray before going into your closet?			
11. Do you report to the hall counselor or house mother immediately those hazards that you cannot eliminate?			

HOW SAFE IS THE BATHROOM?

	Always	Seldom	Never
1. Do you put soap and towels within easy reach before entering shower or tub?			
2. Do you test the temperature of the bath water with your hand before stepping in?			
3. Do you hold on to some secure support while stepping into and out of bathtub or shower? Do you keep it clean?			
4. Do you use a clean nonskid mat in your bathtub or shower?			
5. Do you make your bath mat or rug secure by sewing or taping pieces of rubber on the underneath side?			
6. Do you pick up soap immediately from the bottom of bathtub or shower when it has dropped?			
7. Do you avoid touching a light switch or any electrical appliance with damp hand?			
8. Do you dispose of razor blades in a container which makes it impossible for anyone to cut themselves?			
9. Do you immediately pick up objects dropped on the floor?			
10. Do you immediately report to your hall counselor those hazards which you cannot eliminate, such as loose shelves, broken faucets, broken or damaged light switches and fixtures?			

IRONING CAN BE HAZARDOUS

	Always	Seldom	Never
1. Do you avoid overcrowding in the room in which you are ironing?			
2. Do you stay in the room continuously while the iron is attached?			
3. Do you use an asbestos stand for the iron?			
4. Do you turn off the iron when it is not in use?			
5. Do you avoid attaching or detaching the iron with damp hands?			
6. Do you grasp the plug and not the cord when detaching iron from wall socket?			
7. Do you cool it before putting it away?			
8. Do you know what to do in case of a burn?			
9. Do you know where the fire extinguisher is kept and do you know how to use it?			
10. Do you use nonflammable fluid when removing spots from clothing?			

QUESTIONS AND ANSWERS

Perquisites and Income Tax

Question: What is the prevailing practice of schools and colleges in reporting the value of housing and meals in connection with the information filed with the Internal Revenue Bureau for income tax reports? I know that the practice varies, as some schools consider the entire value of the housing and meals is not reportable; others consider that the value of the meals only is not reportable; others consider that the value of the housing of those employes who are on twenty-four hour duty is not reportable but that the value of the housing of the employes who have no responsibilities beyond those of the classroom or day time duties is reportable. Perhaps some consider the value of both meals and housing is reportable. I suppose, too, that the interpretation that various regional income tax offices place on this matter has a large bearing on how it is handled.—H.B., Pa.

ANSWER: Section 22(a) of the Internal Revenue Code, in defining gross income, states in part that gross income includes gains, profits and income derived from salaries, wages or compensation for personal services of whatever kind and in whatever form paid.

Section 22(a)-3 of Regulations 111, which deals with the subject of compensation paid other than in cash, provides in part that if services are paid for with something other than money, the fair market value of the thing taken in payment is the amount to be included as income. If a person receives as compensation for services rendered a salary and in addition living quarters or meals, the value to such person of the quarters and meals so furnished constitutes income subject to tax. If, however, living quarters or meals are furnished to employes for the convenience of the employer, the value thereof need not be computed and added to the compensation otherwise received by the employes.

The determination of whether the value of housing and meals furnished to an employe constitutes taxable income to him depends upon the facts in each case. An employe who receives a stipulated basic rate of compensation from which is deducted the value of living quarters and subsistence must include the value thereof in gross income. The "convenience of employer" test is not applicable where the value of subsistence and quarters furnished to an employe constitutes a part of the compensation paid for his services. In this connection attention is called to I.T. 2692 published in Cumulative Bulletin XII-1, 28 (1933) and to the case of Herman Martin (1941) 44 B.T.A. 185.

Only with respect to an employe who receives a stipulated salary and "in addition thereto" his quarters and meals is it necessary and appropriate to apply the test of "convenience of the employer" rule in determining whether the value of such quarters and meals is includable in the employe's gross income for federal income tax purposes. In such case it is not sufficient merely to show that the employer requires the employe to accept the meals and lodging furnished for him but it must appear that because of the nature of the work it is necessary for the employe to accept the meals and lodging provided by the employer in order properly to perform his duties. (See Mim. 5023, published in Cumulative Bulletin 1940-1, 14.)—J. HARVEY CAIN, *Forest Hills, N. Y.*

Central Office on Personnel

Question: What do different colleges and universities do about maintaining a centralized administration personnel office or organization?—G.F.B., Fla.

ANSWER: I can name about 30 institutions that have fairly well organized central personnel offices performing these functions alone. A number of others centralize the personnel activities in one office along with other assigned responsibilities. There is a lot of interest in this subject among colleges and universities right now and we can expect to see many names added to both of the foregoing lists in the near future.—DONALD E. DICKASON, *director, Office of Non-Academic Personnel, University of Illinois.*

40 Hour Week?

Question: Should nonacademic employes work more than 40 hours a week? How about maintenance employes?—A.R.J., Kan.

ANSWER: The basic principle on which every college or university should try to operate is to meet, insofar as possible, the standards used in its community. In most communities, the five day, 40 hour week is more or less standard. If your institution is located in a community where this is true, you should consider the advisability of following local pratice. There are other good reasons, too.

A definite reduction in the use of disability leave has been noted by one university following a change from a five and a half to a five day week. Turnover also was materially reduced. Some activities on most campuses cannot be closed out by Friday night. Staggered schedules, payment for overtime or compensatory time off may be necessary to provide complete coverage. On the whole, however, I believe that the five day base work week can be made effective without too serious trouble in most institutions.—DONALD E. DICKASON.

Advance Orders on Texts

Question: What is the procedure followed in obtaining advance information as to the quantity and title of textbooks in order that orders may be placed in sufficient time to ensure delivery for the opening of the school term?—E.E.W., Va.

ANSWER: Advance information on textbooks to be used in the schools has become an easier job for the bookstores since the G.I. came to college. It has been necessary for this information to be cleared by some central agency on the campus, and this central agency has generally been able to insist that persons toe the line.

Most schools send out forms to members of their teaching staffs in the spring before school closes, asking them to name the texts they plan to use, along with an estimate of the number to be in the classes. Summer school forms are sent as far in advance of the session as possible. Having pre-registration in the spring for fall classes gives fairly accurate information on which to order books.

Good stores keep accumulative card records on every course and on every professor. This form of chart can be exceedingly valuable. Certain professors always overestimate and others underestimate.—RUSSELL REYNOLDS, *executive secretary, National Association of College Stores.*

NEWS

V.A. Limits Flight Training Charges . . . High Fees Excluding Desirable Students . . . Recommendations of McAllister Study . . . Housing Project Rules Revised . . . Controls on Recreational Facilities Lifted . . . Foreign Scholarship Policies Are Set.

Washington Correspondent: HELEN C. BROWN

High Fees Are Excluding Many From Colleges

WASHINGTON, D. C.—Despite a steadily increasing demand for higher education, student fees have increased to such an extent that many intellectually capable young people are unable to attend college. This is the conclusion based upon a study made by the U. S. Office of Education for the President's Commission on Higher Education.

The report, released on October 7, shows that in privately controlled institutions in the last seven years, the average tuition fee for colleges of arts and sciences has increased 29.3 per cent, for engineering colleges 32.8 per cent, and for schools of dentistry 56.1 per cent.

In publicly controlled colleges and universities, the average tuition fee for residents of the state has increased 31.4 per cent in schools of business administration, 45.5 per cent in graduate schools and 56.3 per cent in law schools. Public junior colleges have increased their tuition fees for residents 40.9 per cent and for nonresidents 80 per cent.

Dr. John Dale Russell, director of the division of higher education, Office of Education, declares that general and educational expenditures had advanced only 24 per cent, much less than the national average increase in the cost of living. He asserts, however, that neither income from gifts and endowments nor appropriations from state and local governments have kept pace with the rising expenditures resulting from increased enrollments. Colleges and universities have become increasingly dependent upon student fees. In 1940 they provided for 38.5 per cent of college expenditures; in 1947 income from student fees was 56.2 per cent of the expenditures.

Studies Withdrawal of V.A. Training Officers

WASHINGTON, D. C.—Reports from 39 universities enrolling more than 125,000 veterans indicate that the withdrawal of one third of V.A. training officers did not add greatly to the responsibilities of the regular college staff, an American Council of Education study reveals.

The chief reason that the withdrawal was not serious was the change in V.A. policy which requires reports only on students not making satisfactory progress.

When such withdrawal adds a considerable responsibility to the college staff, the institution may request its regional V.A. office to reconsider the withdrawal. If replacement is not possible, it may negotiate a contract with V.A. for the cost of services which are a legitimate V.A. function but which now must be performed by the staff of the institution.

F.T.C. Charges Sale of College Degrees

WASHINGTON, D. C.—The Federal Trade Commission has charged Mount Vernon University of Washington, D. C., with selling and unlawfully awarding college degrees. The allegation asserts that "degrees were sold to students on the barest compliance with suggested courses and on wholly inadequate material and theses. In many instances, 'honorary' diplomas and degrees were sold for cash, usually for $50."

Officials of the institution assert that the resident institution was confused with a school of the same name and with overlapping officers and directors operated as a correspondence school and incorporated in Texas. The institution was given twenty days to file its reply to the charge.

V.A. Limits Flight Training Charges; Begins November 1

WASHINGTON, D. C.—The Veterans Administration on September 10 issued telegraphic instructions to all branch offices setting forth the conditions under which V.A. will pay for flight training generally made available by colleges and universities.

The instructions stated: "When courses in flight training are voluntarily elected by the veteran as a related part of his collegiate instructional program, academic credit therefor being given by the institutions as partial fulfillment of the institution's standard credit hour requirement for the veteran's degree objective, the charge for such flight training course may be paid for by the Veterans Administration provided that:

1. "The institution certifies to V.A. that the course in flight training is voluntarily elected and is a related and useful part of the educational objective of his chosen curriculum.

2. "The charge for the veteran for the flight course is not more than the sum regularly charged nonveteran students.

3. "The veteran requests acceleration in the use of his available entitlement for the total charge for the flight training course so voluntarily elected."

The veteran's period of entitlement is charged at the rate of one day for each $2.10 of the total cost for the flight course. The period of entitlement so charged is in addition to the entitlement used for the other part of his course of education or training. V.A. Form 1950a must be filed by the veteran in such cases and the form must indicate separately the total charge for the flight course.

The original regulation provided that veterans who had enrolled in flight training courses prior to Sept. 1,

1947, would not be required to lose time entitlement if the combined cost was within the $500 maximum and that the institution might bill V.A. for the established fees for such veterans until they completed the flight training course.

On October 23, V.A. changed the date for application of the regulation to Nov. 1, 1947. Thus students registered prior to that date will be exempt from the new regulation for the first quarter or semester.

Finds Science Teacher Shortage Serious

WASHINGTON, D. C.—Colleges and universities would require 15,000 more science instructors, including 4500 with doctor's degrees, if the prewar student-teacher ratio were to be re-established, according to the fourth of the five reports of the President's Scientific Research Board.

The report points out that the full impact of rising enrollments is yet to be felt at the senior and graduate levels at which increasing individual contact with skilled scientists is essential. While there is no reason to assume that the prewar student-teacher ratio was an optimum one, the appendix of the report summarizes evidence showing that the present load is resulting in a loss of teaching efficiency.

As one of the contributing factors in the shortage of science teachers, the report points out that "two thirds of all science instructors in higher education, including groups with long experience, received salaries of less than $4000 a year in 1946. Yet young men who have just completed their doctorates can command more than this at the start of employment in industry or government."

Four other reports were issued at the same time.

Construction Controls Lifted

WASHINGTON, D. C.—The Office of Housing Expediter has announced further removal of controls on the construction of amusement and recreational facilities. Permit for the construction of such buildings on college and university campuses is no longer necessary. Multi-purpose structures, in which the primary purpose is not recreation or amusement, have also been exempted from controls.

Pay Rise of 12% for Wisconsin Faculty

MADISON, WIS.—In order to hold and recruit the faculty needed for expanded enrollment, the University of Wisconsin Board of Regents recently voted to increase faculty salaries by an overall average of 12 per cent.

These pay rises for the teaching staff still lag considerably behind the cost of living increase noted in the area. As of June 15 of this year, the cost of living index for Milwaukee was 156.6, using 1939 as 100. In comparison the average faculty pay rises since 1939, by ranks, now total: instructors, 145.5; assistant professors, 134.8; associate professors, 133.4; professors, 130.8.

The average salaries for the coming year as compared with last year's salaries, by rank, are as follows:

	'46-47	'47-48
Prof.	$5,760	$6,267
Associate Prof.	4,301	4,808
Assistant Prof.	3,514	3,894
Instructors	2,645	2,928

These figures are based on salaries for the academic year.

New Disposal Plan for Surplus Textbooks

WASHINGTON, D. C.—The War Assets Administration has announced a new plan for the disposal of surplus textbooks through the Federal Works Agency. The inventory falls into two categories: small lots that have been declared surplus to each of the regional W.A.A. regional offices from time to time and large concentrations of textbooks in the custody of the Library of Congress.

All books will be available to educational institutions at 5 per cent of fair value (fair value is determined as 75 per cent of acquisition price). Educational instrumentalities and state and local governments will be billed on shipment; other nonprofit educational institutions will be notified of their allocations and the payment due therefor. Payment must be received within ten days after notification of charges.

Catalogs of available books are in the hands of the Chief of the Priority Claimants Division in each regional and zone office of W.A.A. Orders should be sent to W.A.A. Customer Service Center, Fourth and Jefferson Drive, S.W., Washington 25, D.C.

McAllister Study Brings Trio of Recommendations

ANN ARBOR, MICH.—Changes in systems of choosing trustees or regents for state colleges and universities, establishment of an industrial relations institute in every state university and organization of urban vocational education centers were all recommended at the national meeting of the Association of Governing Boards of State Universities and Allied Institutions held at the University of Michigan.

The recommendations were made as the result of a year's study of state-supported education by the Very Rev. Charles E. McAllister, Spokane, Wash., president of the association.

Dean McAllister stated that changes are necessary in the methods by which many states select the governing boards of their state colleges in order to eliminate "political consideration." He recommended elimination of all ex-officio members on governing boards and of the bipartisan system by which board members are chosen from each political party. Primary consideration should be the securing of men competent from an educational or administrative point of view, rather than of individuals distinguished for political activity, Dean McAllister declared.

In the field of industrial relations, it was recommended that colleges train leaders who will refuse to exploit the workers, on the one hand, and who, on the other hand, will have a working acquaintance with methods in the settlement of industrial disputes other than the weapon of force.

In the vocational field it was urged that colleges should not be called upon to meet the growing demand for vocational training but that separate schools should be set up.

Council Studies Social Security

WASHINGTON, D. C.—The Senate finance committee has announced the appointment of a 17 member council to study the expansion of the social security program. Edward R. Stettinius, rector of the University of Virginia, is chairman and Dr. Sumner H. Schlichter of Harvard University, associate chairman. One of the issues to be studied is the extent to which educational institutions should be included in an expanded coverage.

P.H.A. Revises Regulations on Housing Projects

WASHINGTON, D. C.—The Public Housing Administration has amended its regulations regarding housing projects for which reimbursement is authorized under Public Laws 335 and 85.

The revised regulation describes the new accounting procedures when the development has been constructed directly by the institution and when under either a lump-sum contract or cost-plus-a-fixed-fee contract. It also indicates the types of records that must be retained, the arrangements for an audit and the arrangements under which advances may be made for construction.

P.L. 85 provides for reimbursement to local bodies and educational institutions which completed F.P.H.A. housing projects at their own expense or expended funds for projects that have not been completed by the government agency.

The revised regulation for repayment of housing completed at the institution's expense provides that "a local body may apply for a lump sum payment from funds made available under P.L. 85 for the amount of money it contributed toward the completion of units which otherwise would have been suspended, instead of obtaining such reimbursement by retaining a portion of project income."

In order to obtain a lump sum repayment, it is necessary to execute the necessary amendatory agreement and to submit a claim for repayment on form 1034 with two copies on form 1034a.

Expenditures of local bodies that disbursed funds directly will be audited by P.H.A. Therefore, all documents must be maintained for such audit.

Local bodies that have incurred eligible expenditures in connection with utility work on a reimbursable basis or have expended funds in preparation for units that were eliminated from the program may obtain reimbursement of their expenditures by executing a similar agreement and by submitting a claim for reimbursement on form 1034 with two copies on form 1034a.

The necessary forms can be had from P.H.A. regional offices.

Retirement Plans Grow in Catholic Colleges

NEW YORK.—Catholic institutions of higher education are showing a marked trend toward retirement plans for lay personnel, R. McAllister Lloyd, president of the Teachers Insurance and Annuity Association of America, declares.

The University of Notre Dame has become the sixth Catholic educational institution to establish a retirement plan through T.I.A.A. in 1947; others are Boston College, College of the Holy Cross, Lewis College of Science and Technology, Providence College and Xavier University at Cincinnati.

The Notre Dame plan covers the university's lay faculty of approximately 200. It calls for the contribution of 5 per cent of salary from both university and the person covered. Participation is available to all full time faculty members who have been with the university for one year and have attained the age of 30 years.

Wayne Seeks State Aid to Complete Buildings

DETROIT.—Emergency building needs at Wayne University brought about by avalanching enrollments and increased costs have caused the Detroit board of education to ask the state of Michigan for a special deficiency appropriation of $1,700,000. This amount is needed to supplement an earlier grant of $2,700,000 for two Wayne University buildings. Gov. Kim Sigler has been asked to bring the matter before the legislature.

Rising costs have caused university officials not only to reduce the size of the buildings for which the original grant of $2,700,000 made provision but also to omit all construction items nonessential to basic minimum use. One is a classroom building; the other, a laboratory.

To complete the buildings without additional appropriation would seriously reduce their originally projected use, university officials report. Acoustic tile, elevators for the use of handicapped students and freight, lockers and certain laboratory equipment would have to be eliminated.

Even before the war, Wayne reached a maximum use of physical facilities. Transported army buildings and rented space near by have not met the needs.

Foreign Scholarship Plans Formulated

WASHINGTON, D. C.—President Truman's board of foreign scholarships held its first meeting on October 8 and 9 and adopted policies regarding the awarding of scholarships under the Fulbright Act.

The board estimated that the $140,000,000 now available will make it possible to send abroad each year about 1500 American students, plus some 300 professors and research workers. By law, only the transportation of foreign students and professors to study in the United States may be paid from this fund, but it is anticipated that several hundred will be able to receive such assistance.

The board decided to rely largely upon existing private agencies to select Americans for foreign study. The Institute of International Education in New York will handle the selection, setting up regional committees to review student applications in various sections of the country.

The National Research Council, American Council on Education, Social Science Research Council and U. S. Office of Education will be asked to cooperate in selecting teachers and research workers eligible for grants.

Foreign students and faculty to study in the United States will be selected by a special board to be established in each country.

The program is expected to get under way on a small scale by the fall of 1948 with student scholarships at first limited to postgraduate study.

Minnesota Planning Three New Buildings

MINNEAPOLIS.—Plans are being prepared for three new buildings: a classroom structure, a social science hall and a chemical engineering building, W. T. Middlebrook, business vice president of the University of Minnesota announces.

Funds available from legislative appropriation total $2,586,000 but construction costs have so increased that it may be necessary to leave portions of the interiors unfinished pending the appropriation of additional funds.

C. H. Johnston, architect of St. Paul, says the design will be a transition from the present Mall structures to a more contemporary expression.

NEWS

Role of Science in War Emphasized in Report

WASHINGTON, D. C.—"American science must gear for war," declares the second in the series of five reports, "Science and Public Policy," prepared by the President's science research board.

Released by President Truman this autumn, the report describes the research activities of 16 government agencies both in conducting experimentation and in contracting with educational and other institutions having research facilities. The scope of the research extends from the development of guided missiles, rockets and other military devices to the control of soil erosion and the development of disease resistant plants.

Of the total federal expenditure for research only about one third was made in government laboratories; the remainder went to outside agencies, including colleges and universities, which conducted the research under contract.

Two cautions are included in the report. One is that while the military is interested in basic research, only a relatively small proportion of its expenditures is of this nature. The other is that research must be planned in a way to increase rather than to lessen the opportunities for the training of personnel in the scientific fields.

Commission Studies Government Reorganization

WASHINGTON, D. C.—A commission authorized by Congress to study organization of the executive branch of the government has been appointed and is beginning its analysis. It is composed of 12 members, four appointed by the speaker of the House, four by the president pro tempore of the Senate and four by President Truman.

The commission has a mandate to appraise the present functions and programs of the federal agencies of government and to make its report to the Congress by Jan. 1, 1949. An initial appropriation of $750,000 was voted for the study. Included within its purview are the activities relating to education, including extension education, special programs, such as those in the U. S. Public Health Service, and the services provided through the U. S. Office of Education.

Tuition Raised at Pennsylvania

PHILADELPHIA.—Faced with a $2,000,000 increase in operating costs for 1947-48, the University of Pennsylvania is raising tuition gradually during this year in almost all schools and departments, President George William McClelland announced recently. For full time students in the undergraduate schools the increase will not become effective until next February when the tuition will be raised from $250 to $300 a semester.

In announcing the increase, President McClelland stated that it was made necessary by rising costs of operation in every division of the university, especially in connection with the school's policy of keeping the quality of its instruction high. Too, the university plans to add to the retirement plan recently put into effect for its faculty a similar annuity program for its other employes.

Rockefeller Fund Aids Colleges of South

NEW YORK.—Colleges and universities of the South were the chief beneficiaries of $4,151,421 appropriated by the General Education Board in 1946, according to a recent report.

This trend was a definite departure from the board's previous policy of attempting to raise standards of scholarship "through the development of facilities and opportunities for fundamental research and training in the physical and biological sciences, in the social sciences and in the humanities."

The board granted a total of $950,000 to five schools for endowments and $620,000 to six others for plant improvement. Other monies were strictly for research purposes.

Special emphasis was placed on the support of Negro colleges.

Texas Institutions Campaign

AUSTIN, TEX.—Sixteen state supported colleges in Texas have joined forces and are launching a $60,000,000 building program to be financed largely by Confederate pensions. The thirty year program, designed to make the institutions adequate for present and future needs, can be achieved only by amending the state constitution and the self executing amendment will be voted upon this month.

Blame Head Gear for Football Injuries

CHICAGO.—Much of the blame for fatalities at high school and college football games can be directed to the equipment worn by the players, according to a report presented at the annual convention of the National Safety Council.

The report was contained in a paper presented by three Chicago surgeons, Drs. Charles E. Mock, Charles E. Mock Jr. and Charles J. Mock. The statistics were collected by the committee on injuries and fatalities of the American Football Coaches Association, of which Dr. Floyd R. Eastwood of Purdue University is chairman.

The report emphasized the fact that much of the football gear worn by the 616,000 high school and 65,690 college students who participate annually is "better for offensive purposes than for protection."

"During the last twenty-five years there has been an evolution in equipment from the soft cumbersome padded materials to plastic or hard fiber equipment sometimes held in place only by canvas. It does not take much stretch of imagination to understand why the majority of skull fracture-brain injuries occur to the defensive players," Dr. Mock Sr. stated.

Those who purchase athletic equipment must bear some of the responsibility for this trend, according to the report. The manufacturers recognize the danger but state that such equipment is demanded. The surgeons declared that a "combination of engineering and medical thought is necessary to solve the head guard problem in football."

Fenn College Gets Funds for Engineering Hall

CLEVELAND.—A gift of $500,000 to finance the immediate construction of a new mechanical engineering building at Fenn College has been announced by Charles J. Stilwell, chairman of the board of trustees. The gift was one of the largest in local college history.

The new building will be three stories high and of structural steel and concrete slab construction, with an exterior of brick and Indiana limestone. It is the first of five new structures called for in a $3,341,500 development program.

GIFTS AND BEQUESTS

• WESTERN RESERVE UNIVERSITY received a grant of $8232 from the U. S. Public Health Service for the expansion of the training program for clinical psychologists.

• UNIVERSITY OF ILLINOIS officials are to receive government grants amounting to $87,850 for research and training in the field of psychology. The grants will include $32,600 for research in aviation psychology; $4000 for fellowships in public health, and $44,000 for training in clinical psychology.

• BRYN MAWR COLLEGE announced that $1,155,327 had been subscribed this year in a two year campaign for $2,000,000. This will make possible increases of from 23 to 33 per cent in faculty salaries, which have not been raised since 1920.

• THE UNIVERSITY OF MICHIGAN has recently received gifts amounting to $201,992.

• WESTERN RESERVE UNIVERSITY, Cleveland, announces receipt of a $100,000 grant from the U. S. Atomic Energy Commission to be devoted to research on the effects of radioactive substances and of atomic energy on the body and on living cells.

• QUEENS COLLEGE, Flushing, L. I., has announced a $3500 grant to President Paul Klapper from the Carnegie Corporation to assist in his study of current educational and administrative practices in colleges and universities.

• NEW YORK UNIVERSITY'S law school will be the recipient of all profits of the C. F. Mueller Company, spaghetti products manufacturer, owing to the fact that the company, incorporated as a $1,000,000 New Jersey profit corporation, has become a nonprofit Delaware concern with all income marked for the New York school.

• OHIO STATE UNIVERSITY Research Foundation, Columbus, has recently entered into 24 new contracts totaling $541,619 for scientific research work to be performed at O.S.U. Eight of the research agreements are with private industrial firms and the remaining 16 are for various agencies of the federal government.

Fewer Veterans but More Students This Year

CINCINNATI, OHIO.—"A decided drop in the inflow of new veterans but an overflowing reservoir of total collegiate students" is the report on current attendance at American universities and colleges made public last month by Dr. Raymond Walters, president of the University of Cincinnati and nationally known statistician of higher education.

Telling of preliminary statistics just received from 350 approved institutions throughout the country, Dr. Walters said: "As compared with the G.I. invasion of the colleges a year ago, there are fewer freshman war veterans on the campus this fall, the decreases ranging in general from 10 to 75 per cent. However, a high proportion of the 1,000,000 veterans who entered college last year with federal payment of their tuition and subsistence did good academic work and have returned to upper classes this year.

"There has, moreover, been a big increase in the number of students going to college directly from high schools, so the combined veterans and nonveterans taking both full time and part time courses will probably approach 2,500,000, as compared with about 2,000,000 in the fall of 1946. The current enrollment will likely prove more than 50 per cent larger than that of the prewar peak reached in 1939."

Names in the News

John L. Watson has recently been appointed assistant comptroller of the Oregon State System of Higher Education. He is a CPA in the state of Washington and has had a strong academic background and experience in industry and business accounting.

Harry Hilliard Thompson Jr. has been named assistant treasurer of the University of Georgia. He has held numerous positions with business firms and the federal government. *Stewart B. Holt* has been appointed university engineer and will be connected with the department of plant operations.

Stanley J. Wenberg, former director of the University of Minnesota's bureau of veterans' affairs, became director of the recently established Greater University Fund on November 1. Purpose of the fund is to give alumni and friends of the University of Minnesota a chance to finance refinements in the educational program that cannot be provided for through funds normally available.

Betty Thompson has been appointed director of public relations and publicity at Wesleyan College, Macon, Ga., replacing *Howell Gwin,* who has been handling publicity for four years. Mr. Gwin will remain as head of the journalism department and associate professor of English.

Donald F. Driver has been named assistant director of admissions at Hobart College. He is a Hobart graduate, class of 1943.

Jamie Anthony, purchasing agent of Georgia School of Technology, has been named controller, succeeding *Robert Strite* in that position. *Frank Wilson* has been named to succeed Mr. Anthony as purchasing agent.

Samuel B. Finkel of New York has been named executive vice president of The Dropsie College, Philadelphia. Organized in 1907 for the study of Hebrew and cognate learning, The Dropsie College admits only graduate students and confers one degree, doctor of philosophy.

Lewie C. Stephens, former headquarters officer with the Office of Selective Service Records at Washington, D.C. has been appointed to the new position of personnel director of Ohio State University. He will set up and direct facilities for the selection, training and indoctrination of all nonteaching personnel on campus.

NEWS

Herschel Mendenhall, pastor of the Middle River Friends Meeting of Carlisle, Iowa, has been named business secretary of William Penn College to succeed *C. V. Stanley,* who retired September 1 after serving five and one half years. *Mrs. Mendenhall* will serve as assistant business secretary.

Alva F. Ahearn, construction engineer in the Wisconsin highway commission, was recently appointed superintendent of buildings and grounds in charge of operation and maintenance at the University of Wisconsin. He will assist *Albert F. Gallistell,* director of physical plant, who will continue in charge of new construction and remodeling on the campus.

Harry Lowrance Brown, recently named vice chancellor of the University System of Georgia, will be in charge of agricultural activities.

James F. Rockett has been named president of St. Joseph's College for Women at Portland, Me. He succeeds *George Hermann Derry* who resigned some months ago to accept appointment as international director of social education for the supreme council of the Knights of Columbus.

Harry Morehouse Gage, retired president of Lindenwood College, St. Charles, Mo., has been named temporary president of Doane College at Crete, Neb., until a successor to *Rev. Bryant Drake* can be appointed.

Marshall J. McNeal, registrar at Randolph-Macon College, has been named treasurer to succeed *S. C. Hatcher,* who retired last May.

Leonard W. Mayo, Cleveland civic leader, has been named vice-president of Western Reserve University's recently announced development program which totals more than $2,000,000.

J. Hillis Miller has been named president of the University of Florida to succeed *John J. Tigert.* Mr. Miller was formerly associate commissioner of education for the New York State Department of Education. *Thomas J. Price,* auditor of budgetary funds of the University of Florida, has been named comptroller of the university. *A. K. Lee,* assistant in the accounting division of the university, has been named as assistant comptroller to serve with Mr. Price.

Oliver S. Ikenberry, dean of Salem College in West Virginia, has been named president of Shepherd State College, Shepherdstown, W. Va. He will succeed *W. H. S. White,* retiring after twenty-six years of service.

Harold L. Trigg has been named president of St. Augustine's College at Raleigh, N. C. Some years ago he had served as president of State Teachers College at Elizabeth City, N. C.

Dr. Harry S. DeVore, 56, president of Central College, Fayette, Mo., died recently in St. Louis. No announcement as to his successor has been received.

Dr. James E. Shepard, 72, founder and president of North Carolina College for Negroes at Durham, died October 6 after a few days' illness. He was regarded as one of the country's foremost Negro educators.

Dr. Ralph Dorn Hetzel, 64, president of Pennsylvania State College, died recently. As president of the American Association of Land-Grant Colleges and Universities, he was scheduled to preside at the annual meeting of the association this month.

Joseph C. Connolly, president of South Dakota School of Mines and Technology, died recently.

William Green Lowrey, formerly president of Blue Mountain College and later president of Amarillo Military Academy, died recently at 85 years of age.

The Rev. Frederick Luther Gammage, founder of the Pawling School, Pawling, N. Y., died recently at the age of 87. Pawling School had been discontinued.

DIRECTORY OF ASSOCIATIONS

Associations of College and University Business Officers

Central Association

President: T. E. Blackwell, Washington University; secretary-treasurer: L. R. Lunden, University of Minnesota.

Eastern Association

President: R. C. Magrath, University of New Hampshire; secretary-treasurer: Boardman Bump, Mount Holyoke College.
Convention: Nov. 30-Dec. 2, Benjamin Franklin Hotel, Philadelphia.

Southern Association

President: George R. Kavanaugh, Berea College; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

Western Association

President: William Norton, University of California; secretary-treasurer: William Brand, Stanford University.
Convention: April 25-27, University of Washington, Seattle.

Schools for Negroes

President: V. D. Johnston, Howard University; secretary: L. H. Foster Jr., Tuskegee Institute.

Educational Buyers Association

President: Gerald D. Henderson, Vanderbilt University; executive secretary: Bert C. Ahrens, 45 Astor Place, New York, N. Y.
Regional Meetings: Nov. 14, 15, North and South Carolina group, Chapel Hill, N. C., J. A. Branch, chairman.
Convention: May 5-8, Deshler-Wallick Hotel, Columbus, Ohio.

Association of Superintendents of Buildings and Grounds of Universities and Colleges

President: Paul H. Elleman, Ohio State University; secretary-treasurer: A. F. Gallistel, University of Wisconsin.
Convention: May 1948, University of Minnesota.

Association of College Unions

President: Douglas O. Woodruff, University of Utah; secretary-treasurer: Edgar A. Whiting, Cornell University; editor: Porter Butts, University of Wisconsin.

American College Public Relations Association

President: Horace Renegar, Tulane University; secretary-treasurer: Max E. Hannum, Franklin and Marshall College.
Convention: June 23-27, Denver, E. D. Whittlesey, University of Denver, convention secretary.

National Association of College Stores

President: A. W. Littlefield, Barnes and Noble, Inc., New York, N. Y.; executive secretary: Russell Reynolds, 189 West Madison Street, Chicago.
Convention: April 19-21, Hotel Pennsylvania, New York City.

PRODUCT INFORMATION

Information on the materials, equipment and supplies with which an institution is built, operated and maintained and which are used in its various departments is of vital interest to those charged with the business operation. College and University Business recognizes the importance of this information and believes it has rendered a real service by grouping manufacturers' announcements and new product descriptions into a separate part of the magazine. We believe this is an infinitely better plan than to mix such information through the editorial pages where it becomes obscure and confusing.

You will find manufacturers' advertisements from pages 41-64. Pages 62-63 contain descriptions of new products and items of interest. Further details on any product advertised or described may be obtained without obligation and with a minimum of effort by use of the postcard below.

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USE THIS CARD

This card is detachable and is provided for your convenience in obtaining information on all items advertised in this issue or described in the "What's New" Section. See reverse side.

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INSTITUTION _____

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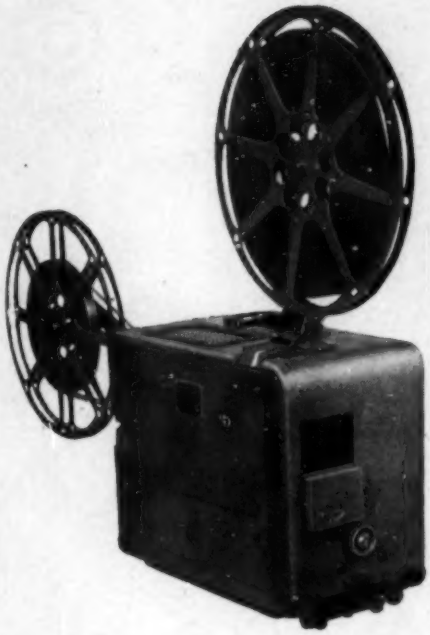


AMERICA'S FINEST TEACHERS

WELCOME THIS TIRELESS ASSISTANT...

Filmosound

Speeds Instruction,

Helps Learning,

Lightens Teaching Loads

When U. S. education was in its infancy, students had few textbooks, no photographic illustrations, and few opportunities to see the world beyond their own communities.

Today the whole world . . . and the wealth of the world's learning . . . come into the classroom in sight and sound—through Filmosound. In today's curriculum, the integrated audio-visual program is second in importance only to modern textbooks and modern physical equipment.

Filmosound-projected 16mm motion pictures, both sound and silent, are assisting thousands of teachers to instruct effectively the largest classes in the history of American education. Research studies have proved that motion pictures, properly used, help students learn 40 per cent more—in less time.

The nation's leading schools and colleges have long preferred Filmosound, precision-built by the engineers of the famous Bell & Howell professional studio equipment. Simple and mistake-proof in operation, easy to maintain Filmosound is ever-ready for dependable, *professional-quality* performance.

1907 40th ANNIVERSARY 1947

Write today for illustrated literature to Bell & Howell Company, 7192 McCormick Road, Chicago 45. Branches in New York, Hollywood, Washington, D. C. and London.

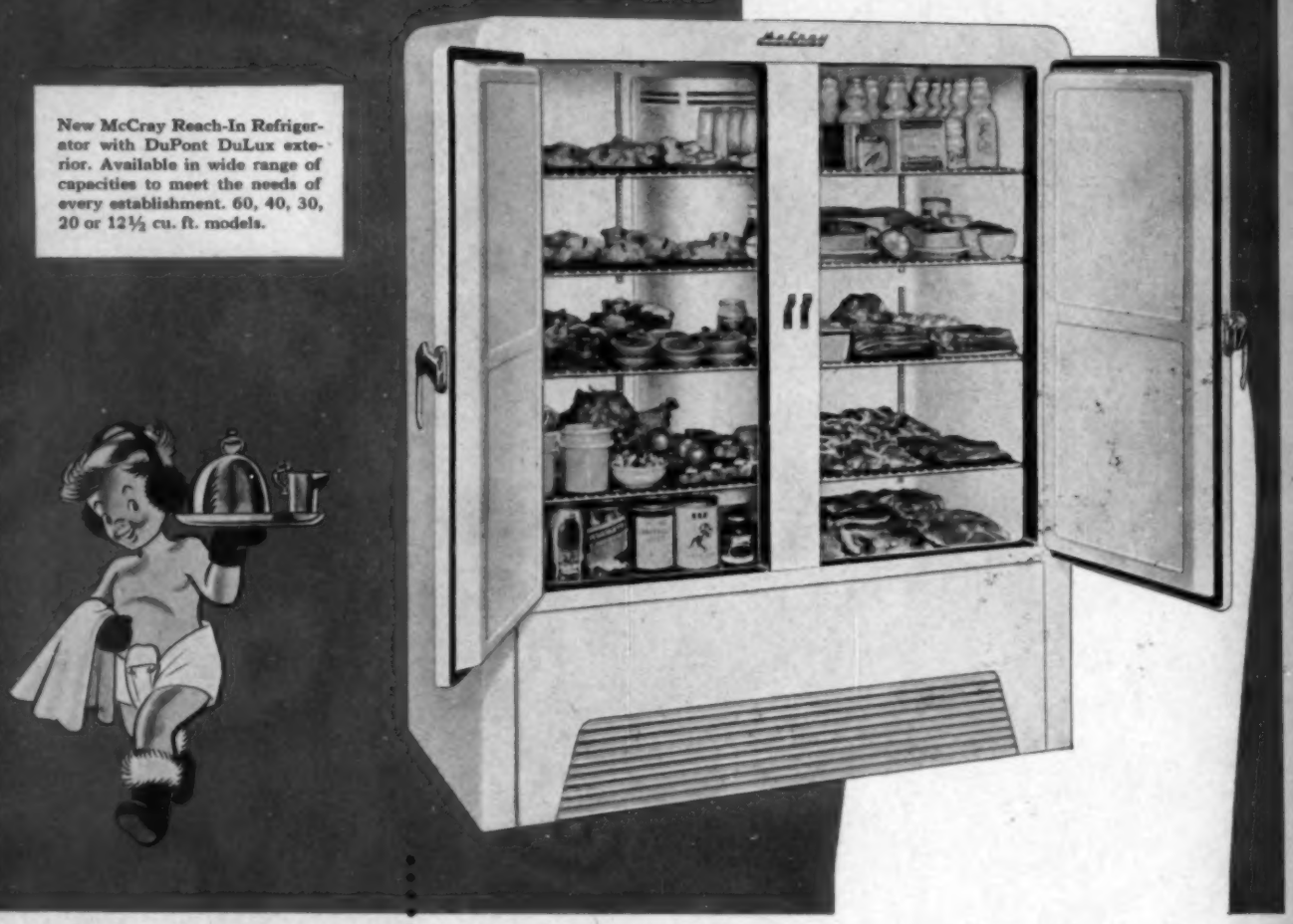
PRECISION MADE BY

Bell & Howell

Since 1907 the Largest Manufacturer of Professional Motion Picture Equipment for Hollywood and the World

McCray KOLDFLO Refrigerator...

New McCray Reach-In Refrigerator with DuPont DuLux exterior. Available in wide range of capacities to meet the needs of every establishment. 60, 40, 30, 20 or 12½ cu. ft. models.



Adjustable, Removable Shelves ... accommodate the widely different heights and sizes of various types of foods ... cans, bottles, etc. Shelves are of metal bar type, readily shifted or removed.

Food Freshness Keeps Customers Coming Back

This big, beautiful, all-steel exterior, all-porcelain interior McCray is planned especially to provide the most effective and convenient refrigeration for hotels, restaurants, clubs and institutions.

McCray's famous KOLDFLO system sends a constant *upward cold flow* of refrigerated air, rising against the bottom of trays and shelves, gives uniform cold throughout the interior ... uniform protection to all contents ... keeps food *flavors fresh* ... food *values high* ... profits coming home. Write to McCray Refrigerator Company, 775 McCray Court, Kendallville, Indiana.

GO MODERN WITH

McCray KOLDFLO

PFAELZER BROTHERS FEATURE EVERYTHING IN MEATS

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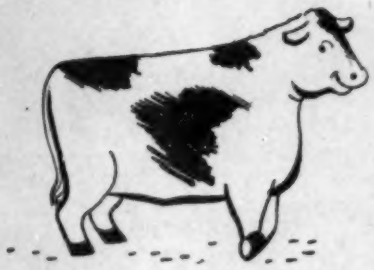
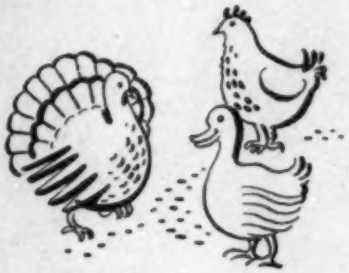


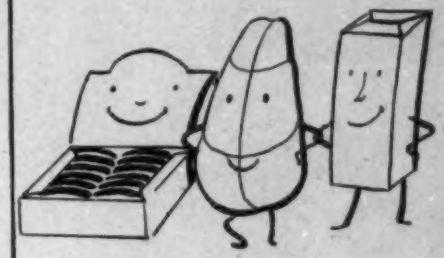
LAMB

VEAL



POULTRY

PORK



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Looking for meat entrees for your menus that are LOW in cost and at the same time, tender, tasty —satisfying:

Interested in procuring meat items that add VARIETY to your menu and SAVE BOTH TIME AND LABOR?

We can supply them. In fact we already do, to schools and colleges throughout the nation. Our PERSONALIZED SERVICE enables you to achieve absolute FOOD COST CONTROL because it makes a specialty of filling orders *to your exact specifications.* It assures UNIFORMITY of quality and weight averages. Our superior trim means PLUS VALUE on every purchase.

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Please send me free of charge the items checked: ☐ Illustrated Market Guide and Price List ☐ Personalized Service Booklet ☐ Meat Charts

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The "Inside Story" *of a remarkable* 16 mm. Sound Projector...

This amazing cut-away view of the interior of the Ampro "Premier-20" 16mm. Sound Projector reveals the complex precision mechanism and advanced design of this unusual unit. It presents graphically the many functional parts which assure Ampro's crisp, brilliant pictures and high-fidelity sound reproduction.

Both sound and silent films can be shown on this Ampro 16mm. projector. Compact, easy to operate, it is ideally adapted for use in homes, clubs, churches, schools, salesrooms and for exhibits. Has ample volume and illumination for ordinary auditoriums. Thousands of Ampro 16mm. sound projectors have made remarkable performance records in many branches of the U. S. Government—in leading school systems, libraries, universities, churches—in top industrial concerns.

Send for circular—Write today for fully illustrated circular giving details, specifications and prices on the Ampro "Premier-20" 16mm. Sound-on-Film Projector.

AMPRO CORPORATION • 2851 N. Western Ave., Chicago 18, Ill.
A General Precision Equipment Corporation Subsidiary

Amproslide Model "30-D"

Two Projectors in One...
for Filmstrips and 2"x 2" slides

This remarkable unit offers—extra brilliant illumination—split-second interchangeability from slides to filmstrips and back—simplified, quick threading for filmstrips—and simpler focusing, operating and cleaning.

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PRECISION CINÉ EQUIPMENT

Enjoy all the Profits from Ice Cream

- You control cost and regulate quality
- You build your own business with your own brand
- You increase sales volume through frozen custard and other forms of soft ice cream
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This enjoyment of *all* of the profits from ice cream can be yours easily with a Mills Counter Ice Cream Freezer. Automatic in operation, ice cream freezing is reduced to three simple steps: fill with mix and flavor, set the controls, draw off into containers. No simpler way to make more money has ever been developed in the ice cream field.

CONSIDER... ***AND WRITE US FOR DETAILS TODAY***

MILLS INDUSTRIES, INCORPORATED

DEPT. 524, 4100 FULLERTON AVENUE, CHICAGO 39, ILLINOIS • Makers of Mills Master Ice Cream Freezers and Hardening Cabinets

IT'S NEW

and

IT'S NEEDED

Yes, this Mosinee Roltowl and cabinet combination is brand new! There isn't another roll towel on the market made from pure sulphate material, and thus able to provide the efficiency and economy in use as will MOSINEE ROLTOWLS.

This new Roltowl dispenser was designed with school washrooms in mind. The hood covers the roll. The cabinet is equipped with a lock—and a towel saving feature known as a "Rocking Core" which prevents users from spinning the roll to take unneeded towels. Not a single mechanical part can become "out of order."

Schoolmen who have seen this towel and cabinet have really *enthused* over it.

BAY WEST PAPER CO.
GREEN BAY, WISCONSIN
A Division of Mosinee Paper Mills Co.

MOSINEE *Sulphate Towels*

Prep-Towls • Zip-Towls • Trim-Towls • Turn-Towls • Roltowls

SILVERWARE • CHINA • GLASSWARE WITH YOUR COLLEGE SEAL

for College Dining Rooms and Dormitories

Two attractive, dignified designs are available in a heavy silver plated quality with 18 per cent nickel silver base. Write for prices and information.

A durable quality of china is available, featuring the college seal or letters. Write for prices.

Both shell and sham water glasses of strong yet thin glass are decorated with the college seal or letters. Also coasters and glass ashtrays. Write for prices.

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ATTLEBORO, MASSACHUSETTS

WAX YOUR FLOORS *Electrically* . . . AND SAVE!

Waxing floors electrically — *The Finnell Hot Wax Process* — is much more than a time-saving method of applying solid wax. Hot waxing affords greater penetration — allows the wax to *flow* into the pores of the floor — and thoroughly utilizes the wax solids. *Hot waxing with Finnell-Kote,* whose genuine wax content is three to four times greater than average wax, produces a finish unique in wearing and protective qualities, and hence is more economical on a year-to-year cost basis.

Finnell-Kote is heated in a *Finnell-Kote Dispenser* attached to a *Finnell* machine. The melted wax is fed to the floor through the center of the brush ring, and is uniformly and rapidly spread by the revolving brushes. *Sets in less than ten seconds,* and polishes to a beautiful, non-skid finish that actually *seals* out dirt and grime. *Finnell-Kote* is specially processed for heavy traffic areas . . . contains genuine Carnauba. Can be used on all types of flooring except rubber and asphalt tile.

Finnell makes a complete line of Waxes, Water Emulsion as well as Spirit Waxes . . . also a full line of Cleansers and Sealers . . . and Floor-Maintenance Machines and Accessories for every type of floor care.

For consultation or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 4411 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

THREE R'S FOR FLOOR MACHINE BUYERS

Rugged, Reliable, Reputable—the "three R's" that add up to floor machine value! Remember them when you choose a floor machine. *Rugged* strength for years of hard service; *Reliable* performance on the job; A *Reputable* name that has always stood for floor machine quality. HOLT floor machines have these "three R's" and then some. For over a quarter century, HOLT floor maintenance equipment has been the choice of the country's leading institutions. Check HOLT before you buy—today!

THE HOLT UNDERSLUNG

The ideal floor maintenance machine where silent, smooth operation combined with under-furniture efficiency is called for. Distance from floor to top of chassis less than 6". Comes in five models. Eleven Holt attachments equip the Underslung for any job.

THE WORLD'S FINEST FLOOR MACHINES FOR OVER A QUARTER CENTURY

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CITY _____ STATE _____ 59

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Miniature DC portables, with knife-edge pointers and mirror scales to eliminate parallax and afford full advantage of the accuracy of the instrument.

MODEL 430

An extensive group of portables, for general testing and all-around use. Large rectangular opening permits easy reading of mirror scale.

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WESTON *Instruments*

Panel, Portable and Laboratory Instruments
Tube Checkers • Test Equipment • Illumination Meters
Sensitive Relays • Thermometers • Photronic Cells

60 FACTORY BRANCHES FROM COAST TO COAST

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CONTROL SYSTEMS

WILCOX KEY TAGS

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DROP IN ANY MAIL BOX W.E. GUARANTEE POSTAGE
BELOIT COLLEGE BELOIT, WIS.
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Identify your keys with Wilcox Key Tags. Money saved on key-loss, pays for key-tag cost. Prompt delivery—numerous styles—three different colors of wood fibre or metal. Write for complete Wilcox catalog.

325

SMART NEW DOOR PLATE

Long lasting, precision made plates with easily read numbers. Numerous styles in plastic, aluminum or bronze can be supplied quickly.

W.W. WILCOX MFG. CO.

564 W. RANDOLPH ST. · CHICAGO 6, ILL.

'SEXAUER'

"EASY-TITE"

THE FAUCET WASHER THAT'S FABRIC-REINFORCED LIKE A TIRE

... outlasts ordinary kind 6 to 1

STOP COSTLY LEAKS that boost water and fuel bills while ruining valuable fixtures. "Easy-Tites" ... made of DUPONT NEOPRENE that withstands absorption and extreme high temperatures (upwards of 300° F), won't split or mush out of shape.

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ADDRESS_____

CITY_____ STATE_____

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An Organ Builder Testifies: "... there are no finer Chimes available today, regardless of price or manufacturer"

"It is my honest opinion, both as an organist and organ technician, that there are no finer Chimes available today, regardless of price or manufacturer. Their tone is pure and flawless; devoid of 'stray' harmonics and unwanted overtones, their action is quick and reliable year in and year out.

"Six years ago I decided to donate a set of Chimes to the Church in which I play, as a memorial to my Mother. I carefully investigated, tried and compared practically every well-known make of Chimes and finally settled my choice on Maas. I have never regretted the choice."

JOHN M. MARKOE
Bloomfield, N. J.

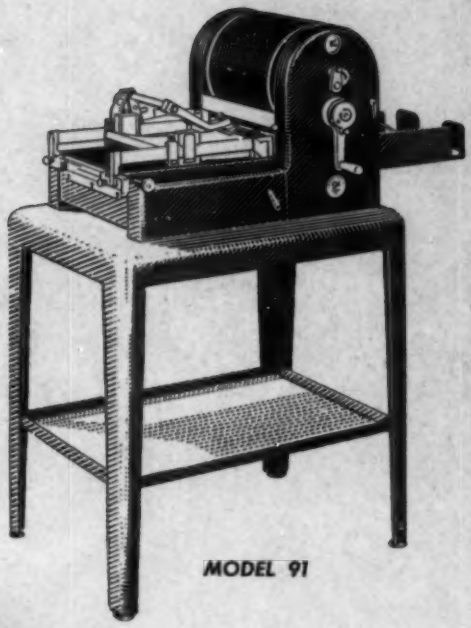
Maas dealers everywhere are eager to show you how the Maas Chimes can be installed to best advantage and most economically in your church. . . . Let us send you descriptive information and the name of our dealer in your vicinity. (Specify type of organ you have)

MAAS CATHEDRAL CHIMES

Dept. 28, 3015 Casitas Ave. Los Angeles 26, Calif.

versatile

MODEL 92



MODEL 91

MODEL 90

Simple—your secretary or office boy can operate it. No special training required.

Versatile—letters, post cards, forms, folders . . . variety of shapes, sizes, colors . . . at lower cost for long or short runs.

Fast—always ready for use. Little preparation time. No extensive daily "cleanup" needed.

Electrically driven or hand-operated models. Complete line now available. Call the Mimeograph distributor in your city for a demonstration.

The Mimeograph brand duplicator

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WAX Protects

BEAUTIFIES, REDUCES MAINTENANCE

ARE YOU seeking ways to save maintenance expense? To prolong the life of your costly floor coverings? To beautify the floors throughout your building? Neo-Shine Wax is the answer. It's a Concentrated Wax . . . actually 50% richer in wax content . . . and will cover a much greater area per gallon. It dries bright without polishing . . . gives your floors a clean, lustrous sheen that lasts and lasts. Use Weatherall Waterproof Wax for areas that require frequent mopping. Write for samples.

HUNTINGTON LABORATORIES, INC.
HUNTINGTON, INDIANA • TORONTO

NEO-SHINE®
SELF-POLISHING WAX
® WEATHERALL WATERPROOF WAX

Our New Delivery Insurance Plan!

YOU CAN ORDER YOUR FUTURE SEATING REQUIREMENTS NOW-FOR DELIVERY LATER

The plan is simple. Decide now:

(1) Whether you'll want portable steel grandstands or portable wood bleachers, and

(2) What seating capacity you'll need. Then, send us a tentative order and we will give you an estimated cost and delivery date. Thirty days before probable shipping date, you will receive a firm quotation at which time you may either give us definite shipping instructions or ask us to remove your tentative order from our schedule.

In the tables, we show a few group arrangements and capacities. Many others can be supplied.

Universal Bleachers are better and yet offer a substantial savings. Lower cost per seat—lower maintenance—longer life—greater safety—smaller investment per seat. Be sure of delivery—get on our production schedule, NOW!

A Universal Steel Grandstand

STEEL PORTABLE		
Length	*Rows High*	*Capacity*
90'0"	8	520
138'0"	10	1000
198'0"	10	1430
234'0"	12	2028
WOOD PORTABLE		
75'0"	9	495
135'0"	10	990
210'0"	10	1540
180'0"	15	1980

Universal BLEACHER COMPANY
CHAMPAIGN — *Bleacher Experts for 30 Years* — ILLINOIS
606 SOUTH NEIL STREET

THE "Educated" FLOOR

HOOD RESILIENT TILE

Hood Rubber or Asphalt Tile Flooring didn't just "happen." It was the direct result of education. Designed and manufactured to fill a basic need, it started as a *scientific* product developed by research. Chemical, Physical and Mechanical research at the higher levels still controls and improves its quality.

Hood Rubber or Asphalt Tile Floors are *made* for the task. They stand up under the toughest kind of traffic but still meet the most rigid decorative or functional requirements. Hood *Super-Density* eliminates dirt-catching pores — makes maintenance easier — preserves *resilience* — and produces a lasting sheen. Colors and marbleizations are permanent because they go all the way through the tile.

B. F. Goodrich, famed for "First in Rubber" research, combines with Hood excellence of manufacture to give you finer flooring "educated" to the particular requirements of the schools and colleges of America. Choose Hood — choice of experts, since 1925.

A copy of the Hood Flooring Catalog in color is yours for the asking.

HEALTH PROTECTION . . .
GREATER ECONOMY
AND CONVENIENCE

Typical sanitary DUO installation—safeguards health, reduces maintenance, wins goodwill.

The washroom picture throughout the country is rapidly being influenced by an unusually practical and sanitary Washfountain —THE BRADLEY DUO.

All types of public buildings, institutions, schools, stores, and industrial plants are installing DUO-Washfountains to cut washroom maintenance costs, improve sanitary conditions, add convenience, and reduce hot and cold water consumption.

One DUO-Washfountain serves two people simultaneously with individual sprays of clean, running water. Troublesome, dripping faucets are eliminated by automatic foot-control which safeguards hands from contagious washbowl and faucet contacts. Installation and maintenance expenses are reduced to a minimum. Learn more about the sanitary, sturdy, economical DUO. Write for latest illustrated DUO-Washfountain Bulletin No. 464-D. BRADLEY WASHFOUNTAIN CO., 2353 W. Michigan Street, Milwaukee 1, Wisconsin.

Bradleys are Nationally Distributed Through Plumbing Wholesalers.

BRADLEY
Duo Washfountains

Seal Out...

INK
ACIDS
ALCOHOL
ALKALIS
ETC.

With

PYRA-SEAL

That's the way to guard hardwood floors . . . to protect your floor investment. PYRA-SEAL treatment gives floors a hard, lustrous, beautiful finish that resists spotting and staining. And, because PYRA-SEAL *seals the pores* in the floors, the protection lasts so long. That's why PYRA-SEAL outwears ordinary finishes many times over . . . why it is the most practical . . . most enduring . . . and most economical floor treatment for wood floors.

Write for Information, Dept. C

VESTAL INC.
ST. LOUIS NEW YORK

WOOD

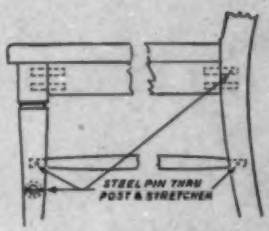
Unexcelled for friendly warmth

CARROM FURNITURE CRAFTSMEN *Build* FOR THE DECADES

Attractive, well-made Wood Furniture combines, to a high degree, both literal and figurative warmth and friendliness. From a practical, physical standpoint wood, because it is to a great extent a non-conductor of heat, has a friendly, comfortable "feel" that invites use. But over and above this . . . wood possesses a natural *emotional warmth* that is normally generated by intimate, friendly things.

Carrom Wood Furniture possesses, in a great measure, these characteristics of "Friendly Warmth" . . . appealing to the natural instincts of the average person. This is especially desirable for institutional use where the individual finds himself more or less remotely situated from home and friends. Both physically and psychologically, he enjoys the gracious and beneficial influence of "friendly warmth", generated by the ageless spirit and fibre of WOOD!

Carrom Wood Furniture is made especially to meet institutional needs . . . college and nurses' dormitories, hospital rooms, ward or lounge. Whether used to furnish an entire building or just a room, its basic styling, simple lines, functional adaptability and strong construction combine with its inviting atmosphere of "friendly warmth" to provide a maximum degree of intrinsic worth.



RAILS PINNED TO POSTS

It is not enough that Carrom posts, legs and rails have a tight drive-fit. As further assurance of serviceability, a wood pin or metal insert is driven through the joined part to engage the post, leg or rail and hold it more securely.

CARROM INDUSTRIES, INC., LUDINGTON, MICHIGAN

CARROM

WOOD FURNITURE FOR DORMITORY SERVICE

WASHABLE SERVICE APPAREL

by Woolf

★ SMART AND RUGGED GARMENTS ★

APRONS: Bib, Bar, Tea, Mechanic, Waist.

CAPS: Cooks, Doctors, Bakers.

COATS & GOWNS: For all occupational and professional uses.

DRESSES: Smartly styled uniform dresses for every occupational and professional use.

HOSPITAL APPAREL: Doctors' Gowns, Patients' Gowns, etc.

SHIRTS: Doctors', Bakers', Utility.

•

Special Garments to Meet Your Special Needs.
We Invite Your Inquiries.

WRITE FOR FREE ILLUSTRATED FOLDERS

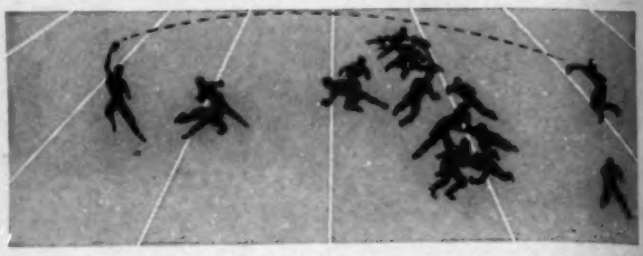
H. WOOLF *and Co., Inc.*

529 SOUTH FRANKLIN STREET CHICAGO 7, ILL.

SERVING SCHOOLS SINCE 1929

"TEAMWORK"

is the key to an economical, trouble-free Heating System



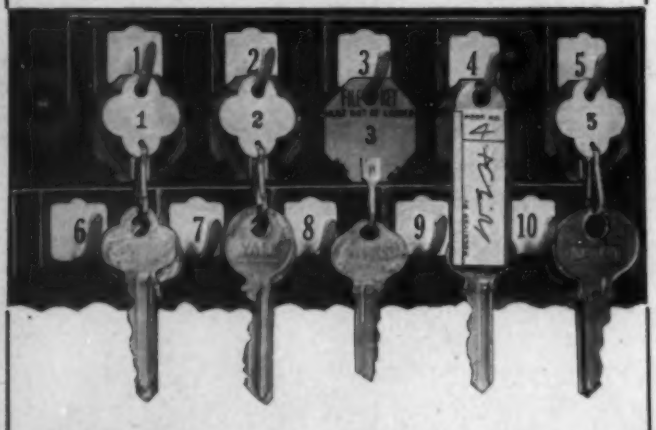
THE DUNHAM HEATING "TEAM"

is a coordinated unit making "first downs" in steam temperature variations . . . steam volume variations . . . continuous circulation . . . proportionate distribution. It kicks the goal by automatically balancing the heat supply with the heat loss of the building. This overcomes the vagaries of the outside weather and keeps the building temperature constant at any desired temperature. C. A. Dunham Company, 450 East Ohio Street, Chicago 11, Illinois.

D-1147-¼-C

DUNHAM *HEATING MEANS BETTER HEATING*

NO MORE KEY TROUBLE



1 TelKee is a tried and proven Visible Key-Filing—Key-FINDING System.

2 Whether there are a few keys or thousands of keys—TelKee is simple and effective.

3 It is the perfect system for knowing your keys—knowing where they are when you want to use them.

TELKEE
Reg. U.S. Pat. Off.

Visible Key Control SYSTEM is the Answer!

Write for Circular.

P. O. MOORE, INC.
298 Fourth Ave.
New York 10, N. Y.

4 TelKee retains a Reserve - Pattern key—never loaned. Tells you to whom other keys have been loaned.

5 Your keys are identified only by the special TelKee Cross Index—Positive Control.

6 New instruction booklet based on 14 years' experience makes it easy to set up and operate.

WANT ADVERTISEMENTS

POSITIONS WANTED

Purchasing Agent—Fifteen years institutional purchasing experience; presently, and during past four years, assistant director of purchases for one of the states operating under centralized purchasing system, purchasing for state university, colleges, and welfare institutions; interested in position as purchasing agent, or purchasing agent and business manager. Write Box CW24, COLLEGE AND UNIVERSITY BUSINESS.

Physical Plant Manager—Competent superintendent of buildings, grounds, power plant, utilities, construction, farm and recreational areas; efficient personnel, purchasing, refectory, laundry and business manager; of broad training and extensive experience serving many years with a foremost college. Write Box CW 27, COLLEGE AND UNIVERSITY BUSINESS.

Professional Engineer—With extensive experience in plant operation and maintenance including college and university work is now available; postion of plant superintendent or supervisor of buildings and grounds is desired; excellent references. Write Box CW26, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds – Thoroughly familiar with physical plant operation, maintenance and procedure; organisational and executive ability; good record of accomplishment; married, age 43. Write Box CW28, COLLEGE AND UNIVERSITY BUSINESS.

The rates for want advertisements are: 10 cents a word; minimum charge, $2.50.

Address replies to

COLLEGE AND UNIVERSITY BUSINESS
919 N. Michigan Avenue, Chicago 11, Ill.

IN A SERIES OF SUCCESS STORIES WITH THE LEGGE SYSTEM OF NON-SLIP FLOOR MAINTENANCE

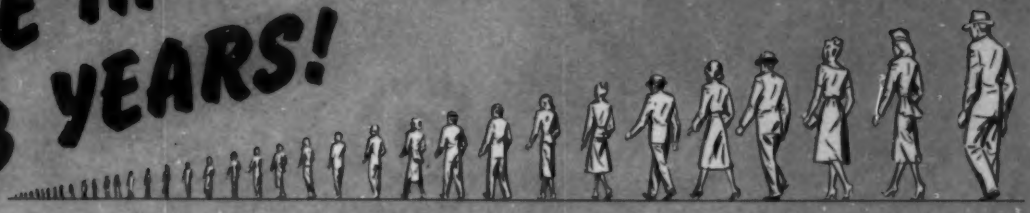
CASE HISTORY No. 52

before

11 SLIPPERY-FLOOR ACCIDENTS IN 6 MONTHS

after

NONE IN 3 YEARS!



THE slippery finish from floor maintenance methods used in a large office building caused eleven falls in six months. The problem was put to a Legge floor expert: "Give us polished, attractive floors which are Non-Slip."

After thorough study of floor conditions and maintenance facilities, the Legge representative introduced a practical program. Results: three years of good-looking floors without a single accident!

A WORKABLE PLAN THAT KEEPS COSTS DOWN

Similarly, in hundreds of leading buildings, institutions and plants, Legge scientific floor maintenance, engineered to individual problems by trained technicians, has provided smart-looking floors with SAFETY.

Because each Legge program is tailored to your needs . . . because Legge investigates, prescribes and instructs maintenance crews in effective techniques . . . you get a *workable* plan which gives you lastingly Non-Slip floors at lower cost!

Users report 50% less floor maintenance labor with the Legge System; 25% less materials; restoration of mal-treated floors; effective floor preservation. And you reduce accidents up to 95% . . . effect impressive savings in compensation and liability payments, lowered insurance premiums.

CORRECT FLOOR MAINTENANCE COSTS LESS

LEGGE'S 3-WAY PROTECTION

- √ Non-slip Safety
- √ High, Lustrous Finish
- √ Floor Preservation

YOUR 3-WAY SAVINGS

- √ Reduced Insurance Premiums
- √ Maintenance Costs 50% Lower
- √ Floor Replacement Unnecessary

GET BEAUTIFUL, SAFE FLOORS THIS *PROVEN* WAY

The Legge System is the *proven* way to safe, lustrous floors: it is approved by leading testing laboratories; is recommended by casualty insurance companies.

Find out how this valuable safety service gives you beautiful floors at low cost. Send for our free booklet, "Mr. Higby Learned About Floor Safety the Hard Way." It's yours without obligation. Just clip the coupon to your letterhead and mail.

LEGGE SYSTEM

OF *Non-slip* FLOOR MAINTENANCE

WALTER G. LEGGE COMPANY INC.

New York • Boston • St. Louis • Chicago • Ft. Worth • Seattle • Cleveland
Los Angeles • Washington, D. C. • Denver • Rochester • Pittsburgh • Detroit

WALTER G. LEGGE CO., INC.
11 West 42nd St., New York 18, N. Y.
360 N. Michigan Ave., Chicago 1, Ill.

Gentlemen:
Please send me your free book, "Mr. Higby Learned About Floor Safety the Hard Way."

Signed _____

Title _____

Type of Floor _____

Area _____ sq. ft.

c11

13 YEARS ON MADISON SQUARE GARDEN

And USED ON THOUSANDS OF THE FINEST GYM FLOORS IN THE UNITED STATES

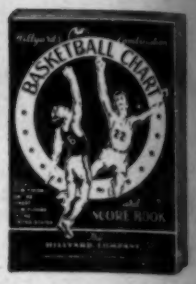
Hillyards STAR Gym Finish

"Perfection in Surface Protection"

★

FREE

To Coaches and Officials



★ NO GLARE ★ NON-SKID ★ SUPER TOUGH ★ LONG WEARING ★ ECONOMICAL

HILLYARD SALES COMPANIES

470 Alabama St. San Francisco 10, Calif. DISTRIBUTORS **HILLYARD CHEMICAL CO. ST. JOSEPH, MO.** BRANCHES IN PRINCIPAL CITIES 1947 BROADWAY, NEW YORK 23, N. Y.

GET THE FACTS ON

THE QUIETER, FASTER, HAND DRYER!

ELECTRIC-AIRE*

Automatic EVAPO-DRYER

This entirely new automatic hand dryer is the result of more than 22 years of experience and study of hand drying needs in buildings.

Electric-Aire Evapo-Dryer permanently solves the paper towel shortage problem. It is completely automatic, providing an uninterrupted hand drying service. It's the easy, pleasant, sanitary and modern way to dry hands. It offers ten distinct advantages over old fashioned, more costly methods.

Write for prices, delivery dates and list of ten advantages.

ELECTRIC-AIRE ENGINEERING CORP.

209 West Jackson Boulevard • Dept. A • Chicago 6, Illinois

*® Also Ask About Electric-Aire Hair Dryers

Coaches like tough, rustproof Dudleys

They know that Dudley Locks are *completely* rustproof, inside and out. Moisture-laden air from nearby shower rooms can't affect working parts.

Rugged, dependable Dudley Locks resist picking and tampering, but open instantly to the right one of 64,000 possible combinations. Master Chart permits quick opening by an authorized person.

Ask to have the Dudley expert near you help plan economical protection for your school. No obligation, of course.

RD-2

DUDLEY LOCK CORP.

Dept. 1122, 570 W. Monroe St., Chicago 6, Ill.

Breakfast With The "Back-Home" Flavor...

WHAT'S *your* favorite dish? The answer will probably depend upon the part of the country you hail from.

But millions from every part of the land hail Kellogg's Corn Flakes as their best-liked breakfast cereal. It's the most popular ready-to-eat cereal in the world—as welcome as a dish of black-eyed peas to a Southerner ... as clam chowder and codfish cakes to down-Easters.

So lay in a good supply of Kellogg's Corn Flakes. And order the handy individual size. There's no waste this way. Students like a package of their own.

KELLOGG'S CORN FLAKES • RICE KRISPIES • PEP • KELLOGG'S 40% BRAN FLAKES • KELLOGG'S ALL-BRAN • KELLOGG'S RAISIN BRAN FLAKES • KRUMBLES • KELLOGG'S SHREDDED WHEAT

MOST STUDENTS LIKE Kellogg's MOST

THE GREATEST NAME IN CEREALS

Battle Creek and Omaha

Nothing can better express the joy of Christmas than the music of beautiful bells. Borne through the skies on golden wings, it soars straight to our hearts and makes even more ecstatic the happiness that dwells there.

Christmastime is the time of all the year when we know happiness for what it truly is—when love and kindness and the pleasure of giving are the guideposts of our lives. That has been true down through the centuries: the darkness of doubt and selfishness has ever vanished before the brilliance of the Spirit of Christmas.

Down through the centuries, too, multitudes have hearkened to bells, and to carillons—and this love of bell music has never waned. Why not plan to thrill your community with the sweetest bell music ever heard—the music of CARILLONIC BELLS. Inquiry about this modern carillon should be made now if installation by Christmas is desired. Write Dept. COL-11.

Schulmerich
ELECTRONICS, INC.
SELLERSVILLE, PA.

"CARILLONIC BELLS" • TOWER MUSIC SYSTEMS • ACOUSTIC CORRECTION UNITS • SOUND DISTRIBUTION SYSTEMS • CHURCH HEARING AIDS

New...1000 Watt Projector
Gives you Everything

FROM 3¼ x 4 DOWN TO 2 x 2 (35mm.) SLIDES PLUS FILMSTRIP

ANOTHER GoldE FIRST

DOUBLE BLOWER COOLED

GoldE ALL-PURPOSE now brings you unmatched versatility in high efficiency, long range projection of color and black and white slides *plus* film-strip. More light per watt . . . yet cooler! *Attractively priced.* Immediate delivery.

Write for Bulletin No. 473

Showing adaptations of All-Purpose Model from basic GoldE units which may be purchased individually.

GoldE Manufacturing Co. 1222-B W. Madison Street Chicago 7, U. S. A.

YOUR GUARANTEE

(10 YEARS)

of lasting satisfaction

Clarin

STEEL FOLDING CHAIRS

Designed for enduring service—strongly re-inforced for extra wear. Wide seat and anatomically correct back afford maximum comfort. Quiet—open and close with one hand.

No. 2317-W

Write
CLARIN MFG. CO.
4650 W. Harrison St.
CHICAGO 44, ILL.

There are more *Clarin* steel folding chairs in institutional service than any other make

Only Sloan

can say this:

63% OF ALL HOTELS* ARE SLOAN EQUIPPED—

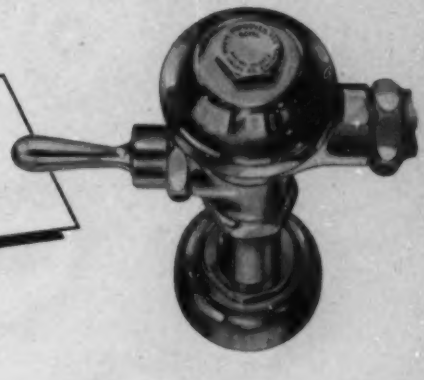
90% OF THESE ARE EXCLUSIVELY SLOAN!

There are several reasons for Sloan's pre-eminence. For one thing, maintenance costs are reported as low as ¼ of 1c per valve *per year.* Then, too, Sloan Flush Valves save water; they protect public health by preventing back syphonage; they can now be whisper quiet; they have unlimited life—yet cost no more. That is why more Sloan Flush Valves are sold than all other makes combined.

SLOAN VALVE COMPANY • 4300 W. Lake St., Chicago, Ill.

***Hotels of 100 rooms or more.*

sloan *Flush* valves



WHAT'S NEW

NOVEMBER 1947

Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 40. Just circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your request to the manufacturer. If you wish other product information, just write us and we shall make every effort to supply it.

Webster Prefabricated Radiation

The new Webster prefabricated radiators are designed to be recessed under

windows and concealed in plaster walls. These concealed convectors offer controlled steam heating in a single compact unit combining heating element, supply valve, return trap and union connections. The unit is light and easy to handle, connections are easily made and steam-fitting costs are reduced.

The heating element is contained in a sheet metal enclosure with openings at top and bottom for natural convected air movement, distributing heated air uniformly throughout the room. Positive control of heat is provided by extending the Webster supply valve handle through the enclosure permitting complete shut-off. With the new design the entire heating element is accessible without destroying wall construction.

The enclosures are formed from furniture steel and finished in baked prime coat. A wide choice of radiator sizes in each of five types of enclosures permits selection of standard units to meet almost every demand. The unit illustrated shows an arched inlet so made that the heating element is removable by pulling away the handle, unscrewing four wood screws and withdrawing the baseboard. **Warren Webster & Co., Dept. CUB, Camden, N. J. (Key No. 580)**

Diesel Generating Engines

After five years of research two new Diesel engines have been developed for generating electric power. Without any increase in size or weight over earlier models, the new engines provide power increase, improved design and better materials.

Known as the D315 and the D318, the new engines develop from 70 to 104 horsepower as maximum output. Colleges making their own electric power will be interested in these engines and in the technical refinements now available in them. **Caterpillar Tractor Co., Dept. CUB, Peoria, Ill. (Key No. 581)**

All-Purpose Projector

The new GoldE double-blower-cooled 1000 watt all-purpose projector is designed to handle everything from 3¼ by 4 down to 2 by 2 inch slides as well as single and double frame filmstrips. The new unit provides high power illumination with lower operating temperature. Sharp and brilliant screen images are assured through double blower cooling and a precision optical system which provides efficient light output per watt.

Total light output is directed through the smallest slides and filmstrips and a stream of cold air is forced over the small slides or filmstrips by the front blower, thus assuring maximum cooling and protection. The new projector is

compact and offers a choice of single element and fully color corrected projection lenses for focal distance and size of image. The lens is easily removed for cleaning and the spiral focusing thread permits focusing to hairline sharpness. The unit has a rugged base to prevent shaking or tipping and rubber legs to prevent scratching. It is sturdily constructed yet light in weight and is available in a carry case for convenient portability. **GoldE Mfg. Co., Dept. CUB, 1220 W. Madison St., Chicago 7. (Key No. 582)**

Faucet Handle Replacement

A new type faucet handle has been designed to serve as replacement on all standard sink, bath and lavatory fixtures.

When handles slip or become stained, cracked or lost, the new Nation-Wide handle can be attached and thus save replacing the entire fixture. It is designed to fit all diameter valve stems, either square or spline shank, no matter how badly the splines are stripped.

An Allen set screw in the side of the handle is tightened to force a hardened steel blade into the valve stem, thus producing a positive lock-tite grip when the handle is attached. It is made of chrome plated brass in both beaver-tale and cross handle types. **Sturgis Plating & Mfg. Co., Dept. CUB, Sturgis, Mich. (Key No. 583)**

Plastic Floor Tile

Plastile is a laminated and decorative plastic floor tile with excellent sound absorption qualities which is made from vinyl compound. The product retains a constant, shiny surface, thus obviating the need for waxing. It is not harmed by water, alcohol, acids or cleaning fluids and retains a nonslippery surface even when wet, thus making it desirable for use in kitchens and laboratories as well as in rooms and corridors.

Composed of a 3/32 inch layer of genuine vinyl compound bonded to a 3/32 inch resilient base of synthetic impregnated cork, Plastile is flexible and provides a comfortable walking surface. It is available in a wide range of colors in 8½ and 9 inch squares and in 35 inch square sheets. **United States Stoneware Co., Dept. CUB, Akron, Ohio. (Key No. 584)**

Masonry Coating

Para-StoneTex is a rubber base masonry coating which is impervious to alkali, the ingredient of concrete which prevents ordinary paint from adhering, and resistant to water. This product, new in technical concept, in use and in treatment of raw materials, forms a protective coating of chlorinated rubber on concrete or other masonry while giving it the desired painted surface. It produces a fine appearing finish, works easily, dries quickly and stays clean. It is available in white and colors. **Truscon Laboratories, Dept. CUB, Detroit 11, Mich. (Key No. 585)**

Liquid Cleaning Compound

"Whiz-O-Shine" is a concentrated liquid cleaning compound designed for cleaning marble, terrazzo, tile, rubber, linoleum and asphalt floors as well as painted and enameled woodwork. Containing pure vegetable oils, the new product has a pleasant fragrance. Only a cupful is required in a full bucket of water to make a cleaning solution which quickly removes dirt and grease without leaving a film. It is supplied in 5, 15 and 55 gallon containers. **R. M. Hollingshead Corp., Dept. CUB, Camden, N. J. (Key No. 586)**

Chromatype Stencils

The new line of Chromatype brand legal and letter size stencils has been announced. Produced on high grade foreign tissue, the new Chromatype stencils are designed to produce fine copy with any typewriter and exceptional results in stylus work. **Polychrome Corp., Dept. CUB, 2 Ashburton Ave., Yonkers 2, N. Y. (Key No. 587)**

Aluminum Roof Paint

Gilsalume is a new protective roof coating and insulation designed to provide low cost, all year roof protection and weather-proofing. An asphalt aluminum roof paint, Gilsalume is designed to deflect heat in summer, thus reducing interior temperatures, while protecting and preserving the roof surface from rain, snow, frost and dampness. It can be used on asphalt shingles, smooth or slate roll roofing, built-up, slag or metal roofs, nonporous masonry and outside metal work.

The product is applied with an ordinary paint brush or spray gun and is mixed ready for use. Only one coat is required and one gallon economically covers 300 to 400 square feet of surface. **United Gilsonite Laboratories, Dept. CUB, Scranton, Pa. (Key No. 588)**

Product Literature

"The abc's of Wyandotte Wax" is the title of a folder published by Wyandotte Chemicals Corporation, Wyandotte, Mich. Helpful information on Wyandotte Wax and its use on all types of finished floors is presented. The detailed directions include the maintenance of both large and small areas. **(Key No. 589)**

• **"The Aristocrat of Floor Machines,"** is the title of a booklet issued by Holt Mfg. Co., 651 Twentieth St., Oakland 12, Calif. In addition to complete catalog material covering the many types of floor cleaning equipment manufactured by this company, with full specifications on each, the booklet presents much helpful information of a reference type. The best method of handling every type of floor problem, no matter what the material, is given in detail together with a stain removal chart, data on rug shampooing, maintenance hints, what attachments to use for each type of maintenance job, use of floor sanding machines and many other helpful details of interest to the maintenance and housekeeping supervisors. **(Key No. 590)**

• **Turco Paint-Zip,** the effective and simple method for removing paint from wood or metal surfaces without raising the grain or otherwise harming the surface, is described and its use illustrated in a folder issued by Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif. **(Key No. 591)**

Publications of the Department of Education, the University of Chicago Press, 5750 Ellis Ave., Chicago 37, are listed in a catalog recently received. The catalog includes general educational publications as well as those on laboratory, proceedings of administrative officers' conferences and other material. **(Key No. 592)**

Information on the preparation of **Green Spot Near-Freeze Pure Condensed Orange Juice or Grapefruit Juice** is offered in a leaflet issued by Green Spot Inc., 658 Mesquit St., Los Angeles 21, Calif. The ease of preparing these juices for serving, their fine quality and careful processing are some of the subjects covered. **(Key No. 593)**

• Efficient elevator service obtainable by the use of the Westinghouse **"Selectomatic"** is described in detail in an 8 page booklet issued by Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa. Pictorial diagrams illustrate the characteristic demands of elevator service and the flexibility achieved and simplicity resulting from automatic push-button selection. **(Key No. 594)**

The 1948 edition of the **Seal-O-San Basketball Coaches Digest** is now available. This is the eighth year that this valuable reference book has been issued by Huntington Laboratories, Inc., Huntington, Ind. The table of contents makes it easy to find any subject in which the coach or those concerned with athletics may be interested and the divisions under which the articles are indexed include Fundamentals, Defense, Offense and Coaches' Clinic. This 64 page book is listed at 25 cents per copy but the company advises that it will be glad to send a copy without cost to coaches, instructors and other college officials. **(Key No. 595)**

• **Di-Lon,** the wall covering made to give the appearance of wood or marble paneling, is described in a series of folders issued by the Di-Noc Co., 1700 London Road, Cleveland 12, Ohio. Patterns include simulated authentic wood grains, marbles and leathers in 32 designs. **(Key No. 596)**

Suppliers' Plant News

Library Films, Inc., 25 W. 45th St., New York 19, has been organized for the purpose of serving 16 mm. film rental libraries, educational and religious institutions. The organization has acquired the extensive library formerly owned by Walter O. Gutlohn, Inc.

The Amcoin Corp., 1148 Main St., Buffalo 9, N. Y., makers of All-Glass Interior Coffee Making Equipment, announces the establishment of two western offices, one in charge of Mason Hooser Co., Los Angeles, and an Amcoin office in Olympia, Washington, to serve the states of Washington and Oregon.

Hotpoint, Inc., 5600 W. Taylor St., Chicago 44, manufacturers of electric cooking and other kitchen equipment, announces the purchase of the war surplus Allis-Chalmers plant in Milwaukee, Wis., for the manufacture of electric water heaters, automatic dishwashers, sink tops and cabinets. Production is expected to be under way in December of this year.

Vestal Incorporated, 4963 Manchester Ave., St. Louis 10, Mo., recently completed a new plant providing 11,000 square feet of additional manufacturing area. The new wing has insulated, fireproof construction and is completely equipped with radiant heating and high density lighting. The complete modernization of existing facilities and the installation of new equipment are designed to provide larger volume of products for cleaning and sanitation at lower production cost.

FOR BIGGER PROFITS . . . SATISFIED CUSTOMERS . . .

Serve delicious juices

THE NEW HEINZ WAY

NEW — DELICIOUS

•

CONTROLLED COST

•

SEALED-IN FLAVOR

•

HIGH IN NATURAL VITAMINS

•

NO WASTE — FULL PROFIT

•

EASY TO CHILL

•

EASY TO SERVE WITH SPECIAL OPENER

•

BACK-BAR STRIPS FREE

HEINZ NEW INDIVIDUAL-SIZE TINS MAKE FOUNTAIN AND RESTAURANT SERVICE OF JUICES QUICKER, EASIER AND MORE SATISFACTORY

IN the new Heinz line of delicious, natural-tasting juices, you offer patrons distinctive and refreshing flavor that makes a real taste hit! And the new, individual-size tins afford time-saving, labor-saving advantages in service that add up to worth-while economy.

Because of special processes in packing, these Heinz juices not only retain a high degree of natural vitamins but also the delightfully fresh taste and aroma of fine-quality fruit.

There is no waste and you have accurate year round cost control. Ask your Heinz Man to show you the thrift advantages in serving Heinz juices—or write H. J. Heinz Company, Hotel and Restaurant Division, Pittsburgh 30, Pennsylvania.

ASK YOUR HEINZ MAN ABOUT **HEINZ (57) JUICES**

Your Enthusiasm – IS OUR REWARD

VICTOR REG. U.S. PAT. OFF. 16

The new VICTOR "LITE-WEIGHT"

16mm SOUND MOTION PICTURE PROJECTOR

SINGLE UNIT CASE
COMPACT—ONLY 33 LBS.
SIMPLE TO OPERATE
PRICE $375.00

For the first time a quality 16mm Sound Motion Picture Projector specifically designed for classrooms

YOUR OVERWHELMING ENTHUSIASM for the new Victor "Lite-Weight" since its recent announcement is sincere assurance to us that 16mm Sound Projector users need this added versatility and portability.

Because Victor has pioneered so many epochal advancements to create ever wider use in the 16mm field, we are particularly grateful and appreciative for your enthusiastic response to this new product—an advancement that we hope will bring the benefits of 16mm teaching, training and entertaining to new millions. Ask for a demonstration from your local Victor outlet—or write for the new "Lite-Weight" booklet and film sources.

"New Walkaway Portability"

Victor Animatograph Corporation

A DIVISION OF CURTISS-WRIGHT CORPORATION

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